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DR. Lauro Severiano Müller and the other members of the special embassy sent to this country by Brazil to return the visits made during recent years, first by Secretary of State Root, and later by Secretary of State Knox, will probably never complain that the reception accorded them was not sufficiently warm and complete. Probably if they were to express their real sentiments they would say, "How fine this would all be if there were only half as much of it." But this is a very large country, and there are a great many people here and many organizations and institutions that cannot forbear showing the good-will which they sincerely feel toward the great Republic of the South—and this is the first chance they have had in some time to give any sort of expression to this feeling. The amiable Ambassador, therefore, and the other members of his special suite, will have to endure as well as they can the superabundance of our American welcome.

On the day of the envoy's arrival at New York he was lunched at noon and dined at night—as described in some detail elsewhere in this number—and besides did much sight-seeing and receiving and returning of visits. The

next day was equally busy, terminating in a great banquet by the Chamber of Commerce, at the conclusion of which he started for Boston. There he was similarly feted, and taken out to Cambridge, where the degree of Doctor of Laws was conferred upon him by Harvard University. These two days are samples of the Ambassador's entire American visit.

The sincerity of this reception cannot be questioned; the great Northern Republic has the friendliest regard for the great Southern Republic. But in one respect our relations with Brazil are certainly susceptible of much improvement, and that is in the matter of trade, which has not yet struck the proper balance. We took from Brazil last year \$142,000,000 worth of her products. We sent her in return only \$40,000,000 worth of American wares. We took one half of the coffee and rubber that came from Brazil, and yet the bulk of Brazilian purchases was not made in the American market, but in England and Germany. This is not Brazil's fault, it is our own, and it is one that calls for early correction.

THE HOUSE OF COMMONS ON THE PUTUMAYO HORRORS.

THE committee appointed some months ago by the House of Commons of the British Parliament to investigate the Putumayo atrocities has brought in its report. As the English directors of the Peruvian Amazon Co. were men of standing and reputation, there naturally would be a temptation on the part of this committee to attribute all the blame to the Peruvian partners and as far as possible to whitewash the Englishmen connected with the company; but the committee has not yielded to this temptation. While it held the Peruvian manager, J. C. Arana, directly responsible for the atrocities and absolves the English directors from any personal acts for which they could be punished under the Slave Trade law of England, yet it finds them "deserving of severe censure," and adds: "Directors who simply attend board meetings and sign checks cannot escape from their share of moral responsibility when gross abuses are revealed." The committee further expresses its belief "that the Putumayo incidents are but a shocking instance of the conditions that are to be found over a wide area in South America."

This is certainly a very serious imputation to be brought against the rubber country. If it is true, and if the Putumayo revelations are simply one glimpse

of conditions widely prevalent, there certainly is a vast amount of work for humanitarians yet to accomplish; and if these imputations are not true, those interested in rubber gathering along the Amazon should take the promptest means of absolutely disproving them; for the rubber industry has now assumed such a large place in the general progress of civilization that it cannot afford to rest under any suspicion of being associated, at any stage, with barbarities such as the Putumayo investigation has brought to light.

WHY THIS DISCRIMINATION?

NATIONS don't get the opportunity every day to celebrate the twenty-fifth anniversary of an emperor's coronation; so undoubtedly some allowance must be made at such a time for an excursion or two from the paths of sound thinking. On that ground, and only on that ground, can an explanation be found for a queer bill under discussion in the German Reichstag making it a misdemeanor to feed babies from a bottle with a rubber mouthpiece, on the theory that it is an unsanitary practice. This is humorous enough to make even the Kaiser, oppressed by the glories of his twenty-five years' reign, give a good, honest guffaw; for if the rubber mouthpiece on the baby's bottle, which can be sterilized outside and inside, and put to soak in boiling water, if need be, is unsanitary, what can be said for the substitute for the rubber mouthpiece provided by nature, where none of these drastic processes of disinfection can be employed? If the rubber mouthpiece is to be made a misdemeanor, mothers should be made a crime.

HOW WILL MR. REDFIELD DO IT?

MR. REDFIELD, the Secretary of Commerce and Labor, has attempted at divers times to express himself as to the dire consequences that will come upon the American manufacturer who, in case the Underwood tariff becomes law, tries to readjust himself to the new conditions by reducing the wages of his employees. But just what can Mr. Redfield do? Where is the law that compels an American manufacturer to pay a higher wage than he feels he can afford to pay, or in fact to pay any wages at all, if he prefers to cease manufacturing? If, in the opinion of the present administration, certain tariff duties are too high, it is the privilege of the administration, if it

can secure sufficient votes, to reduce these duties; but if, under such a reduction of duty, the manufacturer feels compelled to reduce his scale of costs, including cost of labor, so as to meet the new situation, how can he be prevented from so doing? Mr. Redfield has made it plain that in such a case the manufacturer will be visited by the strong disapproval of the administration; but would not the average manufacturer prefer to incur even this distressing consequence rather than to run his mills at a continuous loss?

COLLEGE MEN IN RUBBER FACTORIES.

COLLEGE men appear to be coming into their own, at least in rubber manufacture. There is an item in our news columns in this issue regarding the action of one of the large Akron rubber companies—already employing a number of college men—in sending out invitations through these college employes to the institutions from which they graduated, for promising candidates for employment in the company. The manager, referring to college men, remarks: "We like their spirit and enthusiasm. The broad viewpoint and training these men receive has helped wonderfully in fostering friendly relations with our customers." The young university graduate, with his fresh sheepskin under his arm, ought to be full of spirit and enthusiasm and have a broader outlook than the less educated man, but for a long time he was not at all in favor with manufacturers generally. They thought him altogether too theoretical and impractical. Evidently this view has changed.

TO DO THE ATLANTIC BY DIRIGIBLE.

INTERESTING advices have been received from Berlin to the effect that Count Zeppelin will probably try to cross the Atlantic this summer in one of his big dirigible balloons. This appears like a dare-devil thing to do, in view of the fate of the lamented "Akron" and Verman's ill-starred crew. Some day of course some intrepid navigator of the air will cross the Atlantic, but to the layman it would seem the better part of discretion to manoeuvre airships over land until they show less liability to explosions and to other disturbing tendencies before essaying the long leap from Europe to America.

It is quite intelligible, to be sure, that flyers should look on the Atlantic passage with longing eyes. The man who first accomplishes this flight will go down in history as a

second Columbus. It is undoubtedly a tremendous temptation to aviators. But where there is one chance of going down into history, there are fifty chances of going down into the Atlantic.

It is stated that the German Government will detail a number of warships to be stationed at regular intervals along the route which the Count will be expected to take, in order to lend a hand in case of need. It would be a good idea if the German Government would employ its entire navy in this capacity, for, in the first place, the aviators would undoubtedly need as many available sources of succor as possible, and in the second place, it would be a pleasant spectacle to see a navy put to such practical use.

PLENTY OF POTATOES FOR THE SYNTHESISTS.

THE centre of the rubber stage has been so fully occupied of late by the Brazilians with their vast schemes for competing against the shilling rubber of the Far East that the synthesists have almost been lost sight of; but a dispatch received a few days ago from Minneapolis, saying that there were 100,000 bushels of potatoes spoiling on the railroad tracks, for which no market could be found, brings synthetic rubber once more to mind. For the theory of the laboratory workers, both of England and of Germany—which in fact they have very thoroughly substantiated—is that rubber can be made from starch, with a few intermediate steps such as converting the starch into fusel oil and that into alcohol and that into isoprene, which in turn is changed into rubber. But the basic necessity, according to the leading champions of synthetic rubber, is starch, to be derived either from corn or potatoes—the chief obstacle in the way of deriving rubber from starch in commercial quantities being the cost of the starch. In the present situation, however, with the country full of last year's potatoes for which there is no demand owing to the arrival of this year's potatoes from the south, it would seem to be the synthesists' golden opportunity.

THE RUBBERIZING OF CITY NOISE.

THE staid citizens of the conservative East always associate noise with the exuberant West, but here in Chicago giving serious consideration to a municipal ordinance for doing away with noise, and especially looking to the greatly extended use of rubber for the tiring of vehicles.

Doctors disagree regarding most things (except the size of the fee they ought to have), but the neurologists all agree on this, that the reason city nerves are so unstrung is chiefly because of city noises; and of city noise traffic noises constitute seven-eighths. The tremendous nerve-wrack of so much din is everywhere recognized. There is hardly a city of any size in the country that does not have its anti-noise society, seeking to prod the local authorities into lessening the noise nuisance, and particularly the roar of traffic on the streets.

Here is an unlimited field for the use of rubber. Nobody need be pessimistic as to what we will do with our rubber if we have, as the experts promise us, 170,000 tons of it in 1915 and 340,000 tons in 1919. All of this rubber and a great deal more can be used if every vehicle that travels the streets is rubber-tired, and if the streets where quiet is particularly desired are rubber-paved, as around hospitals, schools, churches, and in residential districts. From such a beginning rubber pavements could spread indefinitely. The practicability of general rubber-paving being once proved, there is no limit to the amount of rubber that could be usefully employed.

If anyone has imagined that the chemists who have been at work so long on the problem of synthetic rubber have relaxed their energies, he will discover his mistake by simply referring to the recent issue of patents as given in the present number of THE INDIA RUBBER WORLD. He will find under the American Patents five that have recently been issued for a "Caoutchouc-like substance and process of making same" to Herr Hofman and his collaborators in the great laboratory in Elberfeld, Germany. It is not to be wondered at, however, that the synthesists keep persistently at work, for the prize they are striving for is a magnificent one, and the success which they have already attained is most encouraging. They have fully proved that synthetic rubber can be made. The only part of the problem yet remaining to be solved is how it may be made cheaply enough for commercial use.

An exceedingly interesting event occurred on June 28. The Hodgman Rubber Co. on that date celebrated its seventy-fifth anniversary, the company having been founded in 1838 by the grandfather of its present president. There were rubber companies in existence earlier than 1838, but they were short lived, for the early days in rubber manufacture were troublous and precarious. Some of the plants of those early companies were later acquired by new concerns, but it is doubtful if there is another company besides the Hodgman which was in operation in 1838 and which has had an uninterrupted career up to the present time. If there is, THE INDIA RUBBER WORLD would be glad to be informed; and if there is not, the distinction of being the oldest American rubber company must be accorded to the house of Hodgman. There will be found on another page a brief historical review of the fortunes and progress of this company during its 75 years.

Dr. Muller, Special Ambassador from Brazil.

DR. LAURO SEVERIANO MULLER, Minister of Foreign Affairs of Brazil and Special Ambassador of that country to the United States, reached New York on June 17 and, together with the other members of the special embassy, was received with marked civic honors and with great cordiality by various commercial bodies.

Undoubtedly the Ambassador has led a busy life, but it is safe to say that he never has had a busier day than his first in New York. In the morning he was taken, with the other members of the embassy, on a special sightseeing tour that carried him from the observation tower on the Woolworth building up to Grant's Tomb, eight miles away. Incidentally, he received a formal call from the Mayor, at his hotel, and shortly after returned the compliment at City Hall.

At 1 o'clock he was tendered a luncheon at the Plaza by the American Manufacturers' Export Association. This was attended by about 150 members and guests. Speeches were made by Assistant Secretary of State Dudley F. Malone, who had been appointed by the State Department to attend Ambassador Müller during his American trip, and who spoke briefly for the Federal Government; and also by Assistant Secretary of the Department of Commerce Edward F. Sweet, Collector John P. Mitchel, of the Port of New York, and James A. Farrell, president of the United States Steel Corporation. Dr. M. de Moreira, president of the association, presided and made an excellent address.

In some respects the most informing speech of the occasion was made by Assistant Secretary Sweet, of the Department of Commerce, as he gave a great many facts relative to trade between Brazil and the United States, stating that our exports to that country had quadrupled in ten years—being only \$10,000,000 in 1902 and \$40,000,000 in 1912—while our imports from Brazil have doubled during the same decade, now amounting to \$142,000,000.

Mr. Farrell at the conclusion of his address presented the guest of honor with a loving cup of gold standing some 20 inches high. Dr. Müller made a brief but felicitous reply, and proposed a toast to the health of the President of the United States.

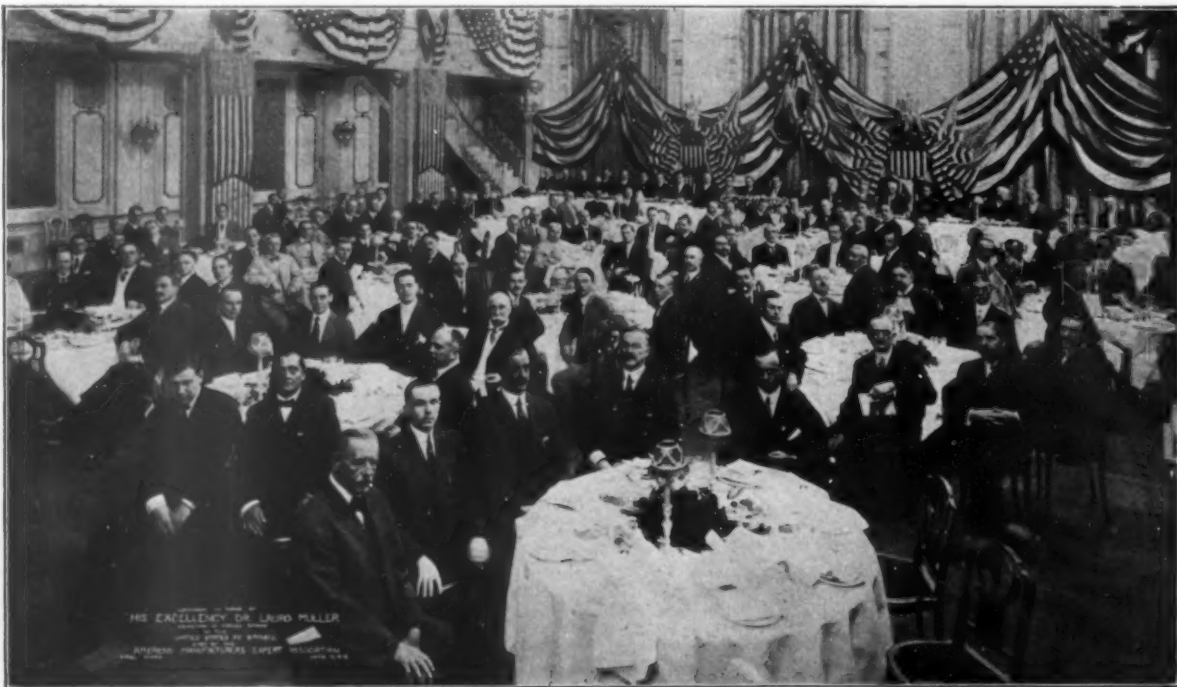
Following this lunch, and more sightseeing in the afternoon, the Ambassador was given a reception and dinner in the evening, at the Knickerbocker, by the Pan American Society of the United States. The function was in charge of a dinner committee including Lloyd C. Griscom as chairman, Robert Bacon, August Belmont, President Nicholas Murray Butler, Jacob Schiff, James Speyer, and others. It was an elaborate affair, admirably "staged," to borrow a dramatic expression. Mr. Gris-

com acted as toastmaster.

The speaking was considerably curtailed, as the dinner did not begin until quarter of seven and it was to be followed by a theater party. The toastmaster—who was very popular among the Brazilians present, having been formerly Minister to Brazil and being



DR. LAURO MULLER.



LUNCHEON GIVEN TO DR. MULLER BY THE AMERICAN MANUFACTURERS' EXPORT ASSOCIATION.

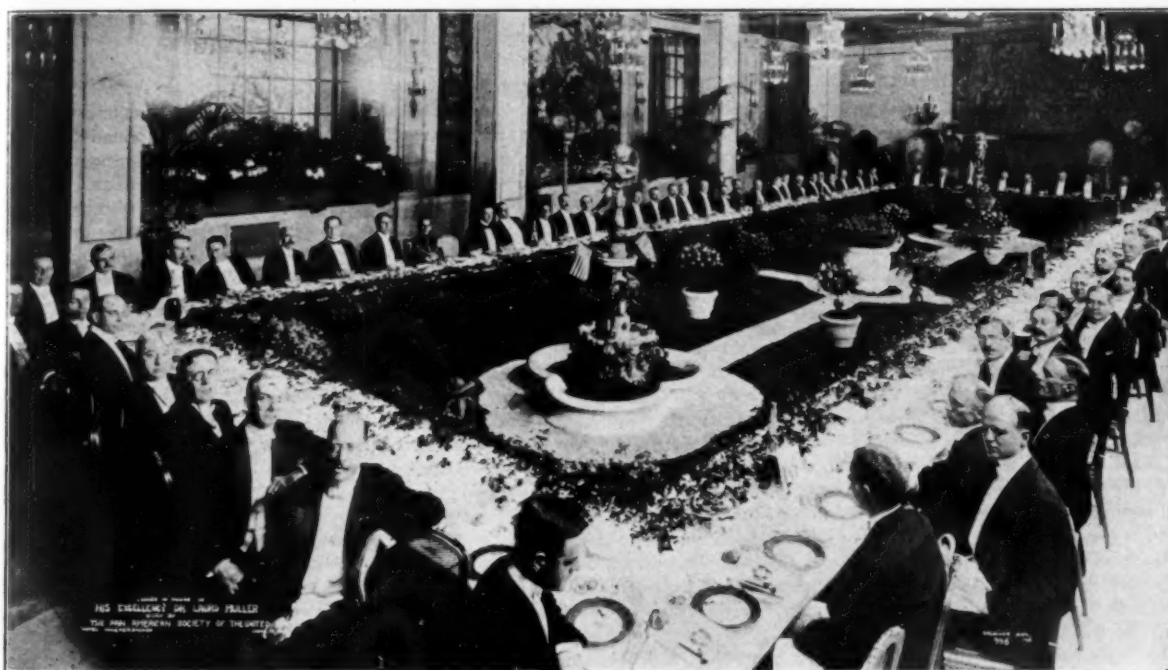
well known in that country—introduced Third Assistant Secretary of State Malone to speak for the United States Government. Mr. Malone touched a responsive chord when he said that he would not be a party to any conspiracy to keep the diners away from the theater, which he knew they would enjoy more than his speaking. He was followed, briefly, by Ambassador Domicio da Gama, and then the chairman presented to the guest of honor a beautiful traveling clock, inscribed with an appropriate sentiment, from the Pan American Society. Dr. Müller responded in a few words, and at 9 o'clock the guests repaired to the New Amsterdam, a few doors away, on the same street, to witness "Follies," a light and sparkling performance, eminently adapted to the condition of the mercury on that particular evening. While quite a little of the humor of the performance consists of what is known as "local hits," the distinguished Brazilians, for whom the four lower boxes had been reserved, appeared to enjoy it heartily.

The editor of THE INDIA RUBBER WORLD had the pleasure of

COMPARATIVE PRICES OF BRAZILIAN AND PLANTATION RUBBER.

IN discussing the fact of hard Pará rubber being quoted at a premium over that of plantation rubber, the "Malay Mail" quotes a suggestion of Mr. E. L. Killick, to the effect that the former article should, in all newspaper quotations, be shown on the basis of its content in actual rubber. The Brazilian product is known to contain on an average 15 per cent. of moisture and impurities, there being thus only 85 per cent. of rubber in comparison with 100 per cent. in the pure product of the plantation. Thus if both qualities were quoted at 4s. the real proportionate cost of fine Pará would be about 4s 8½d, as compared with plantation rubber at 4s.

Mr. Killick (the rubber expert of the London "Financier") further holds that the vaunted superiority of hard fine Pará to plantation rubber is mainly traditional, that opinion gaining adherents every day, even among the most conservative



DINNER GIVEN TO DR. MULLER BY THE PAN-AMERICAN SOCIETY OF THE UNITED STATES.

breakfasting with Dr. Müller last winter at his home in Rio de Janeiro and looks back upon the hour spent with this eminent Brazilian statesman as one of the pleasantest and most profitable during his entire visit to that interesting country.

Dr. Müller is rather a slender man—"wiry," as we say in America—and capable of an amount of physical and mental exertion to which many a heavy-weight would succumb. He is of much the same mould as Senator Root, whose visit to Brazil while Secretary of State is now being returned. While born in Brazil, he is of German ancestry and is a fine representative of the sterling German element that has become so prominent in Southern Brazil, both in government and commercial affairs.

The members of the special embassy attending Dr. Müller include Dr. Helio Lobo, secretary of the embassy; Capt. Antonio Sampayo, Lieut. Euclides Hermes da Fonseca, military aid and son of the President of the Brazilian Republic; Capt. Antonio da Fonseca, military attaché of the Brazilian Embassy at Washington; Dr. de Aquino, Leopoldo Moreira, Alberto do Ipanema Moreira, naval aide, and Capt. Thein Costa, commander of the Brazilian dreadnought Minas Geraes.

of manufacturers. He adds that one or more of the new curing processes now on trial in the East may turn the scale of the market sentiment in favor of the plantation product. Mr. Wickham is actively engaged in Ceylon with his new curing system, which is said to turn out plantation rubber identical with fine Pará, less the impurities of the latter.

The new Byrne process is being taken up in Malaya with results of a highly encouraging nature, a trial consignment made to London some months ago, cured by this process, having been found in perfect condition, containing only ½ per cent. of moisture, and fully equal to any quality of first latex crepe. It is reported that arrangements have been made to install the process and apparatus on about 30 rubber estates in Malaya and Ceylon.

In conclusion, the fact is urged that the chief handicap to the cultivated product has been the lack of proper standardization. The opinion is expressed that if the Byrne process is instrumental in bringing about this very desirable end it will do much to establish plantation rubber as the recognized market standard.

Problems in Vacuum Drying.

By J. P. Devine.

A PAPER READ AT THE THIRD INTERNATIONAL RUBBER CONFERENCE, HELD IN NEW YORK, 1912.

IN the selection of a topic for discussion I rather reluctantly, and yet from necessity, selected one that is intimately identified with the business in which I am engaged, and my remarks may at times seem somewhat personal. Among so many who have devoted their time, ability and energy to solving the many intricate problems in the cultivation and production of crude rubber, as well as to improving and refining methods and processes of manufacture of the ever increasing number of articles—the product of rubber, I can assure you that my limitations are not an unknown quantity.

My introduction to and connection with the rubber industry was made about ten years ago when I sought to interest manufacturers in this country in a new method of drying rubber. I found, however, that the manufacturer was disposed to be quite satisfied with the then existing method and did not hesitate to forcibly express his views and opinions as to any improvement in the drying process by shortening the time or otherwise, except by sacrificing the quality of the rubber and thereby jeopardizing the standards that years had taken to establish.

I had been convinced that the Passburg Vacuum Drying Apparatus, originated and designed by Emil Passburg and William Strohn, of Berlin, Germany, possessed unusual merit for economically and thoroughly removing moisture from materials and particularly where it is desired that the final traces should be removed; as is necessary in rubber and rubber compounding materials, I was ready to and did back my judgment by my reputation and resources for its introduction in this country. Many installations had at that time been made in Germany for drying rubber as well as other materials, and the results from its use, as well as its advantages, were highly satisfactory. Notwithstanding the discouragements of my early efforts, I made investigation as to methods of drying rubber and learned that little, if any, advancement or improvement had been made up to that time, and this confirmed my opinion of the value of the vacuum process, and I have maintained ever since its introduction that the vacuum drying process and apparatus introduced in Europe by Messrs. Passburg and Strohn, and in this country by myself, would be and has since proven of inestimable benefit to the rubber industry.

For years rubber was dried by any means convenient at hand that would not represent an expenditure of capital, the boiler room or a room adjacent thereto serving the purpose, until the effects of the elements upon the rubber began to receive attention and study. And then, the improvements consisted largely in the construction of drying lofts, the racks on which the sheeted rubber was hung and the distribution of heat by coils, or by circulation of hot air by means of fans and blowers; little regard, however, being given to temperature or length of time of the drying process. Until the introduction of the vacuum drying apparatus this primitive method was still in use, and occasionally an advocate is still found, who asserts that the hot air method is necessary for the proper curing of some particular grade of rubber. The fallacy of such assertions is proved by the use of the vacuum apparatus drying every grade of crude rubber, and I shall endeavor to make clear to you the claims I make for the superior quality of rubber dried by a properly designed and constructed vacuum apparatus.

While it is true, considerable thought was given to improving processes for drying rubber, there were no striking departures from the antiquated method of using hot air as the heating medium. The dust and dirt that would settle upon the rubber were the least of the evils; the construction of special drying

rooms from which direct sunlight was excluded, and provisions to eliminate dust and dirt, and the regulation of temperatures for various grades of rubber, as well as the attempt to dry the air before being admitted into the drying room, all contributed to avoid the deterioration of the rubber by such means; but the value of these improvements was doubtful as they only tended to reduce the effect of high temperatures with a consequent prolongation of the drying period. The fact is that the two insidious enemies of rubber are heat and oxygen and these elements are, and always will be present, and necessarily so, in any system of hot air drying. They are deteriorating agents and their elimination is most essential for the proper drying of rubber. Their elimination by the vacuum apparatus has proven the superiority of the vacuum-dried rubber in the processes of its manufacture.

Another and serious objection to the hot air system of drying rubber is, that rubber as it comes from the washing machine, contains a very large proportion of mechanically bound moisture; while this is readily given off in the hot air drying room, its expulsion causes a contraction of the rubber, which, with the oxidation constantly taking place, causes a hardening of the surface that prevents the elimination of the last moisture within the rubber, except by a very prolonged drying period, during which time the rubber is further subjected to oxidation and not unlikely to excessive heat. Unless the last traces of moisture are eliminated, "blowing" is sure to result during the following stages of its manufacture.

We still hear occasionally about "curing" rubber; but in reality this is simply the removal of the final traces of moisture; as stated, under atmospheric conditions, this can only be accomplished by a prolonged drying period, while under vacuum the rubber is thoroughly dried in a very short time, and in practice rubber is immediately worked up after removal from the vacuum dryer.

The deteriorating agents—oxygen and excessive heat—can be eliminated only by the vacuum process and apparatus. This process and apparatus alone afford the proper conditions to dry rubber rapidly, uniformly and thoroughly at a low temperature and without oxidation, independent of climatic conditions.

It must be borne in mind that under atmospheric conditions a rapid boiling can only take place at 100 degs. C. or 212 degs. F. and that as the temperature decreases, the drying time is extended; while under vacuum the boiling point is greatly decreased and increasingly so as the barometric reading is approached. To illustrate, under a vacuum of 29 in. water boils at 25 degs. C. or 77 degs. F. Rubber dried in the vacuum chamber, while the first free water is being removed, will not need to be heated, practically, above the boiling point of water at that particular vacuum. As the moisture is evaporated from the rubber, naturally the temperature of the rubber being dried tends to increase; to prevent any overheating the supply of the heating medium—steam or hot water—is regulated accordingly and entirely shut off before the final drying; the last traces of moisture are therefore drawn off by the latent heat in the dryer accelerated by the high vacuum. Because seemingly high temperatures are used at the beginning of the drying process to expedite evaporation, the erroneous impression is sometimes formed that the rubber is overheated in the vacuum chamber; but in a properly constructed vacuum chamber with its auxiliaries—condenser and pump—properly balanced, the application of well-known physical laws absolutely prevents any overheating, if only reasonable care is taken in its operation.

Then too, the drying process taking place under a high vacuum in the absence of oxygen, oxidation cannot take place. The rubber not being overheated nor impaired by oxidation has greater elasticity and tensile strength, and accomplishes that which is the aim of every manufacturer—to obtain the greatest yield when being made into final product.

As different grades of rubber must be subjected to varying temperatures, the temperature of the heating medium is easily regulated without over-heating or materially affecting the drying time; so that the vacuum process offers many advantages over the old method of drying rubber, whether it be fine Pará or Pontianak.

Another very great advantage of the vacuum process lies in the fact that as the drying period is only a few hours, varying according to grade of rubber, the crude rubber can be washed, dried and processed in a fraction of a day; consequently there can be no deterioration after drying and before using—as it is well known that washed rubber oxidizes very rapidly—and there is no danger of the final manufactured product being porous or spongy, due to the presence of moisture.

The rubber industry has expanded tremendously in recent years, owing to an ever increasing variety of products in which rubber is used. To meet the daily factory demands for large quantities of crude rubber of different grades, the use of the old method of drying is disadvantageous and unsuitable, as well as excessively expensive.

In an average establishment of to-day, making a general line of rubber goods, two tons of crude rubber is a conservative estimate of its consumption. If the old hot-air method is used, in order to properly and thoroughly dry the washed and sheeted rubber, six weeks are consumed in the drying process. Seventy-two tons of rubber would be hanging in the drying lofts, which at \$1 per pound, would represent an idle investment of \$144,000 on raw material, the carrying charge at 5 per cent. amounting to upward of \$20 per day; and should the carrying charges for instance, factory space, etc., be included, the above sum would be greatly increased.

The same quantity of rubber could be more thoroughly and permanently dried by one or two vacuum chambers in a day of ten hours, so as to "work up" whatever grade may be required for each day's output, and the initial cost of such an installation would be less than the cost of the old-fashioned drying rooms for the same quantity. So that the vacuum chamber pays for itself in the savings on investment, carrying, insurance and other fixed charges on raw material, as well as gives a flexibility to the factory for its daily production that cannot be obtained by any hot-air method.

To illustrate the great saving in factory space, a vacuum drying chamber having a capacity of approximately two tons of dry sheeted rubber per 10 hours, occupies a space of 8½ feet high, 15 feet wide by 9 feet long; and its auxiliaries, the condenser and the pump, can be conveniently located at any place in the factory in proximity to the dryer.

In addition, the vacuum drying process offers further advantages over the hot-air system because of the other factory economies derived by its use. The drying expenses for a hot-air system for steam consumption and attendance are enormous. It is an established fact that by any hot-air system not more than one-third of the heat units supplied are utilized in the evaporation of moisture; whereas by the vacuum process practically every heat unit is transmitted to and comes in direct contact with the material being dried. The saving of fuel is consequently most considerable not only on account of the very much shorter drying time—reduced from weeks to hours—but because of the much higher efficiency of the heating medium used in the vacuum drying process.

The vacuum drying apparatus is constructed of cast iron and is practically indestructible; there are no appreciable maintenance charges and fire hazards are eliminated.

As to attendance, only one operator is required to operate the vacuum dryer, who, while one charge is being dried, is engaged in filling the second set of trays with rubber for the next charge, and in recharging the apparatus replaces each tray of dried rubber with one of wet.

A vacuum drying apparatus consists of a vacuum drying chamber, which should be constructed of a special grade of close-grain homogeneous cast iron, equipped with heating shelves made of hydraulically straightened sheet steel plates. I emphasize that the plates should be hydraulically straightened, as by this means only can a uniform even and flat surface be secured on which the trays are placed and which will withstand the strain of the varying steam pressures used during the drying process. It is important that the heating shelves are so constructed as to insure an even surface, as any distortion of the heating shelves will cause the trays to rest uneven and thereby permit an unequal transmission of the heat to the material being dried.

Connected with the vacuum chamber is a condenser, and it is most important that this auxiliary be of proper condensing capacity for the vapors given out during the drying process. In the determination of the size of the condenser, somewhat complex problems arise, for not only must the volume and speed of such vapors be determined, but the proportion to be condensed during the early stages of the drying process must be determined, when the free or mechanical moisture is driven off; and in this connection, there must also be considered the temperature of the cooling water available for condensing purposes. These elements cannot be determined by any "Rule of Thumb Method," but must be carefully calculated. The size and capacity of the dry vacuum pump is of equal importance to the well balancing of a vacuum apparatus; for in order to secure the highest efficiency it is necessary to create the highest obtainable vacuum as quickly as possible, and when obtained to maintain a uniform vacuum throughout the drying period.

Complaints have occasionally been made by some people who have attempted to dry rubber under vacuum that such vacuum-dried rubber was not satisfactory, and the blame was promptly put on the vacuum drying apparatus and process. I may state that though these complaints were, of course, *bona fide*, the cause for such complaints was misplaced. The vacuum apparatus and process have the advantage of working almost automatically and require scarcely any attendance; but these advantages have in the above mentioned cases been abused, and of course not without detrimental effects to the vacuum-dried rubber.

To illustrate what I mean, a certain size of a vacuum apparatus is intended to receive a certain quantity of rubber per charge, and naturally the heating surface of the dryer, which is equivalent to its drying capacity, has, as I have stated, to be most carefully calculated for this purpose, and if the instructions for operating such apparatus, which are most simple, are only followed, it is a physical certainty, I might say, that the vacuum-dried rubber will be satisfactory and far superior to air-dried rubber, because with a vacuum apparatus and process nothing is left to chance or climatic conditions.

In cases, however, where complaints have arisen, the well-meaning people who were using such a dryer, being surprised at the capacity of the apparatus far exceeding their expectations, thought it right to go a little further by further increasing the charge of rubber and ultimately loading the apparatus with a much larger quantity than their apparatus was intended for. Of course, it was soon found that the increased charge could not be dried in the stated time, nor with the stated temperature of heating steam. As it is only human not to decrease one's desires, the natural human remedy was resorted to, that is, an increased temperature of heating steam and also a prolonged drying time. If you consider that the heating surface at a certain temperature within the dryer is intended for a layer of rubber of a uniform and certain thickness, its capacity, or rather

the beneficial results obtained therefrom, will be destroyed, or at least impaired, by an increased quantity of rubber per charge and an increased temperature of heating steam, because the heating surface itself remains the same; and it is this factor which remains constant—that upsets the results sought to be obtained by the violation of well known, but not considered, natural laws.

Experience has taught us to balance the necessary heating surface, to transmit a certain temperature to a certain layer of material to be dried; and it is quite erroneous to argue—though a common mistake—that the same beneficial results may be obtained from a larger quantity of material, by simply increasing the thickness of the drying material and increasing temperature, in the belief that the above mentioned factor would increase proportionately. This, however, is not the case, as I will more fully point out.

If one takes the conductivity of rubber alone into consideration, and the gradual but decreasing evaporation of the water contained therein, it can very easily be understood that by altering some of the factors the physical laws, on which our calculations are based, will be violated without any such intention, and the penalty will be an unsatisfactorily dried rubber;—the cause of which is naturally placed at the wrong door. The fault is not in the apparatus, but in the method of its operation. The same remarks refer to the auxiliaries of an apparatus for drying rubber. These auxiliaries consist of a condenser and vacuum pump which are both calculated to correspond with the capacity of the vacuum apparatus they are intended to serve.

To illustrate what I mean: A vacuum dryer of a certain drying capacity and calculated for a certain purpose is intended to evaporate a certain quantity of water in a given time, and of course, which is essential, at as high a vacuum as is possible under practical working conditions. All this is, to a great extent, based on practical experience with the very material our apparatus is used for. If, however, the condenser, instead of handling the quantity of vapor for which its cooling capacity is calculated, is burdened with ever so much larger a quantity, the result must be detrimental in two ways; it not only re-acts on the dryer and the product it is supposed to turn out regardless of the time, but also re-acts on the working of the pump.

As regards the vacuum dryer, it is essential to have its inner space continuously freed from the vapor arising from the drying material in order that no inner pressure may be created in such apparatus to lower the vacuum. This can only be done by having the arising vapors taken care of in their entirety during their passage through the condenser, the capacity of which cannot be changed at will.

If more vapors are created than the condenser is intended for, such vapors will partly remain in the dryer, and create inner pressure. The inner pressure thus created consequently reduces the vacuum in the dryer and as a consequence the boiling point of the water contained in the rubber is increased, and the rubber will be heated up to a temperature never intended, with detrimental effects to its quality. The overcharging, as I said before, affects the efficiency of the pump and prevents it from creating the desired high vacuum. The reason for this is that a dry vacuum pump—the only type we have in mind in this discussion—is intended, dimensioned and constructed for pumping air and not vapor, particularly as the latter expands so enormously under vacuum. If the pump were intended to exhaust rarified or expanded vapor in addition to rarified or expanded air, its dimensions would be so enormous as to make its use practically impossible.

If, therefore, the dry vacuum pump has to exhaust vapors which have passed uncondensed through the over-taxed condenser, a burden is placed on the pump for which it was never intended; its work becomes inefficient and most naturally impairs the vacuum and efficiency of the whole installation for drying purposes.

I have but briefly outlined some of the factors which have to be taken into most serious consideration in designing and constructing a proper vacuum dryer and its auxiliaries. I submit that it is wrong and unfair to subject apparatus to work for which it is not intended, and to charge the inefficient or insufficient results of such an abused vacuum drying installation at the door of the principles of drying under vacuum,—viz.: rapid and thorough drying at a low temperature.

Owing to the remoteness of plantations and the difficulties surrounding the transportation of machinery and appliances for removing impurities, only primitive and unscientific methods of preparation could be adopted. The use of the vacuum drying process was, in consequence, first introduced and adopted by the manufacturers to dry washed rubber. In recent years, however, much greater thought and study have been given to the preparation of the crude rubber on the plantation. Especially is this noticeable in the quality of the rubber reaching the market from the Malaysian Straits Settlements, and Congo Plantations, where vacuum drying apparatus has been installed and is found to be of great value. This is somewhat reflected in the moisture content of plantation rubber that reaches the market with a low percentage of moisture, as compared with 15 per cent. or more, in Upriver Pará. There can be little doubt that in the future the planter will understand that the price is based upon actual rubber and he will serve his purpose best by adopting the very latest method for the treatment of the raw material so as to free it from impurities and to reduce its moisture to a minimum percentage. Pure and dry rubber does not suffer in transit through fermentation caused by vegetable impurities and moisture. This improved quality of the raw material will not cause the discontinuance of the drying process in the factory. It will, however, tend to restrict the operation for the treatment of such rubber to remove the final percentage of moisture only, and thus simplify factory operation.

The highly satisfactory results to the manufacturer and planter from the scientific and research work in the laboratory have contributed materially to the advancement of the industry, and its further progress can and will be accomplished by a closer and more intimate relationship between the manufacturer or producer and the appliance manufacturer. We are, after all, in our several activities dependent one upon the other, and why not recognize our mutual obligations to co-operate, that a maximum productiveness by newer and better methods may be secured?

NORTH BRAZILIAN SYNDICATE.

Advices have been received from Pará, of the establishment in that city of the North Brazilian Syndicate, Ltd., for the purpose of representing firms, companies or syndicates of capitalists, both Brazilian and domiciled in other countries. Its object will be the development of the resources of Brazil while it will have agents in the principal countries of Europe and America.

STATISTICAL POSITION OF PARA RUBBER.

Statistics quoted by the "Financier" of London show that the visible supply of Pará and Peruvian rubber was reduced from 6,550 tons on May 1 to 6,350 tons on June 1. At the same time last year the visible supply was 6,880 tons. There is consequently a falling off of 530 tons, although the South American output for the season to date has increased by 3,000 tons. From these figures it is deduced that consumption has increased 3,530 tons within the year.

A new Canadian company known as the Sterling Rubber Co., Ltd., is now manufacturing a line of drug sundries at Guelph, Canada. F. S. Friedman is the secretary and treasurer of the company.

A Brazilian's Commentaries on the Akers Report.

THE May number of THE INDIA RUBBER WORLD contained a general review of the report of the Akers Commission, particularly with reference to that part of the report which dealt with the findings of the commission in the Middle East. The June issue contained a review of the Second Volume of the Report, which is devoted to the Amazon Valley. Below are some commentaries on the report, by a Brazilian, who for many years has been prominent in the rubber trade and is very familiar with the rubber industry of the Amazon.

A haphazard reader of the Akers report would be puzzled to trace its origin and might never obtain a proper explanation of its reason for existence unless he learns all the facts that have led to its publication. In this respect, it may be said to be a unique publication.

Such a report would need no explanation were it officially hall-marked or recognized as an investigation conscientiously made under Government direction. On the contrary, however, it seems to be a sort of high-handed censure, set up by a private individual for the special purpose of showing up the past negligence of the government or driving it into further action, at greater speed than it has been accustomed to move at in matters of this sort.

Had this report been published before the promulgation of the Federal Laws for the Economic Defense of Rubber, the object of the publication might have, and perhaps would have, been accepted as a kindly indication of what might be done by the Government to improve the native rubber industries of the Amazon. But after the promulgation of those laws, *all of which it recapitulates at the end*, this publication has a tinge of inopportune obtrusion that rather spoils its otherwise good features. But the report may have been published to assist the safe launching of a special company to undertake a colonization scheme in the lower Amazon. It looks as though it were specially worded to suit the needs of an attractive prospectus, meant to enlist the support of foreign capitalists in a certain direction.

About 1907 there appeared the first symptoms of the competition which rubber grown in Asia threatened to put up against Brazil at no distant date.

About that time Mr. J. G. Vianna published a series of articles in the Pará press, calling attention to the necessity which existed for all interested in the native rubber industry to prepare to meet the competition of the East.

A volume entitled "A Crise Amazonica" was written by Mr. J. A. Mendes, showing the defective methods under which native rubber was exploited, and inciting the Government to take steps to escape the dangers which were ahead by favoring the fiscal and commercial reforms that were necessary.

Mr. J. Simão da Costa was also a champion of the cause of the said reform, and under the heading of "Rational Valorisation of Rubber," proved that in planting rubber abundantly, as near as possible to the Atlantic ocean, in the state of Pará, and by cheapening the cost of living and of transportation in the whole region, lay the only hope of the Amazon's being able to hold its own against the middle East plantation rubber. This, of course, on condition that the government lent its credit and prestige to the undertaking. All these writers were unanimous in denouncing the excessive hardships of the export taxes on rubber producers and the exorbitant rates of freights prevailing. The Chamber of Commerce of Pará also presented a memorial to the Chamber of Deputies of the Federal Union pointing out the excessive customs duties which were levied on all imported necessities of life.

If we now turn to the Report itself and its intrinsic value,

it must be acknowledged that Mr. Akers did all that he was asked to do, to the best of his ability.

As regards the tapping modifications he has tried to introduce in fifty different *seringaes*, within a distance of seven thousand miles, it takes more optimism than we are accustomed to meet, even in the Amazon country, to feel confident that any considerable increase of the production will result therefrom. The chances are that nothing but the pleasant recollection of Mr. Akers' passage now remains at the spots he visited. We doubt whether Mr. Akers had time enough to study the philosophic temperament of the average Amazonian rubber gatherer and how prone he is to follow the lines of least resistance.

The tapping of rubber trees in the East is still an open question, and of course while there are hopes that some inventive genius will some day devise the proper mechanical means by which the extraction of the most latex with the least possible danger to the tree will be accomplished, no one can assert at present that the method Mr. Akers tried to introduce in the Amazons is the very best, nor the last word on the subject. His suggestion for the planting of vegetables along the margins of the Amazon is now followed up to the utmost ability of those who have *Estradas* right by the river banks. But Mr. Akers could not expect men to tap rubber ten and fifteen kilometers (six to ten miles) off the borders of the rivers and at the same time cultivate lands on these borders.

As regards *Theobroma Cacao*, Mr. Akers would be surprised to learn that the Government of Pará issued a booklet, written by Mr. J. Simão da Costa and Dr. J. Huber, teaching how best to plant cocoa and prepare same for export. No appreciable improvement has taken place up to the present, as the result of this propaganda, because labor for carrying out planting operations cannot be obtained economically.

The Amazon's evils have been correctly and conscientiously exposed in a lecture delivered at the Engineers' Club at Rio de Janeiro by Mr. J. Simão da Costa and may be summed up as follows:

1. Lack of sufficient capital to undertake all the necessary reforms to place the native rubber gathering industry on a sounder footing, industrially and commercially.
2. Lack of technical knowledge on the part of the management of the above industries.
3. Natural drawbacks brought about by the extent of territory which must be traveled over before reaching *seringaes*, the unhealthy nature of these, and the great distances between trees that are tapped.

And the only remedies for such evils were also suggested, and are as follows:

1. The undertaking of intensive planting of the *Hevea* tree, side by side with every other branch of tropical agriculture, at the most suitable places near the Atlantic Ocean and under government assistance and supervision, and for the benefit of the whole community.

The series of measures the government has promised to undertake, and is carrying out to the best of its ability, are all indirect methods of cheapening cost of living and transportation, but the benefits to be derived can only be felt after a lapse of many years. It is evident, therefore, that the greatest benefit that could be created for the whole region would be the planting of enough trees to produce, under modern methods and by carefully taught laborers, as much rubber from Pará plantations as the wild rubber which the Amazon is now shipping, leaving the upriver *seringaes* to be exploited, as long as it would pay those whose primitive habits could never be changed by law, or by the spreading of printed instructions, which they cannot read and would never be willing to follow.

The constant procrastination in the undertaking of the intensive culture of the *Hevea* tree, and this alone, is responsible for the crisis which now envelops the whole Amazonian region in a common cloud of insolvency and ruin, and Mr. Akers has failed to point out the real salvation. Nor would the Amazon Land and Colonisation Company, with all the favors which Mr. Farquhar may be powerful and influential enough to obtain from the government, be able to solve the problem: first, because many years must go by before the lands it means to exploit can become inhabitable by Europeans; and second, because the obstacles in the way and cost of transportation to and from the Amazon River, up to the settled portions, must always remain a large item of expenditure in this exploitation.

Mr. Akers tells us that he went up to the experimental farm at Igarapé Assú, on the Braganza Railway, having made the visit in a single day, ten hours of which were consumed on the voyage. Yet he had enough time to see everything and report upon everything representing an outlay of £70,000. In a word: he saw enough to justify the unrestricted condemnation of the whole thing, because the soil is composed of either sand or hard clay.

Mr. Akers will be surprised to hear that geological investigations have led to the conclusion that the whole tract lying between Igarapé Assú, was, to a great extent, submerged for ages. There is not as much humus, then, in this region, as is commonly found in other portions of the State of Pará. As a matter of fact, the really good agricultural section nearest the city of Pará begins just beyond the River Peixe Boi, which is the limit of the Igarapé Assú experimental farm. The lands from this spot up to and beyond Braganza, up to the Gurupy River, are among the best tropical agricultural lands on earth.

The tobacco produced in this zone is famous, and tropical agricultural farms organized under modern methods and tilled by machinery would yield wonderful returns. But what makes this region the most valuable of all the lauded assets of the State of Pará is the excellence and healthiness of the climate of the whole region.

Of course the lands on this side of Pará do not all belong to the government, and no concession of free lands to the extent of 60,000 square kilometres could ever be granted for the asking. But if the lands were needed for any enterprise for the public weal and good, their acquisition by the government would be quite an easy matter.

It is a great pity, therefore, that this proposition was lost sight of by Mr. Akers and his associates, as it would be quite possible to establish European laborers in this region, and the advantages of such possibilities cannot be exaggerated.

As regards the introduction of Chinese immigrants, suggested by Mr. Akers, there is yet to be proven one single instance in which this class of immigrants, even under indenture, ever proved satisfactory in any country.

The history of this class of immigration in the United States of America, in Australia, and in South Africa is of common knowledge, even in the Amazon. Dr. Huber, who visited the East with all the open-minded fairness and generous disposition peculiar to men of science, would hardly endorse Mr. Akers' opinions in this respect. There is no doubt that the Chinese laborer is intelligent, hardy, thrifty and industrious. But at heart he is a merchant, a speculator, a gambler, and a vicious reprobate, just as soon as he feels free enough to act unhindered by military supervision. If there is one place more than another where Chinese immigrants would feel at liberty to found a colony of their own to the absolute exclusion of every one else, that place is the Amazon. In a word—Chinese are not given to intermixing with any other nationality, for the very lowest classes of Chinese have been reared to believe themselves the "sons of Heaven" and all other human beings devils.

Now if we understand Brazil's proclivities, as a nation, one of its best traits is the happy way in which all comers are assimilated. Even the Indians and the Africans are being assimilated by degrees, and the time will come when few traces of these will be left in certain States. If for no other than ethnological reasons, therefore, Chinese should not be imported into the Amazon country.

As a whole, Mr. Akers has rendered the special interests so powerful in Brazil yeoman service in placing before them in a bright, succinct and lucid form, an excellent analysis of the rubber industry of the Amazon valley and its other resources. But much which he now says had been constantly repeated before by others, if in a more unassuming way in terms just as clear and intelligent; and the Federal government of Brazil seems to have awakened to the true situation before Mr. Akers undertook his task. The appendices to his report are proof of this. These comprise all the measures the said government has resolved to carry out, and it would seem that the best and most practical thing to do now is for Mr. Akers and his associates to exert all their influence in seeing that all that has been decreed will be duly put into practice.

It would never do to seek any alteration of the present government program, at this stage. And if the government begins to falter and show signs of indifference in the realization of the measures already provided for legally, then, and only then, would it behoove those interested in the Amazon to force the government's hand.

But the worst feature of Mr. Akers' report is the fact that it was issued at the end of the year 1912, and embodies suggestions that were adequately provided for by the laws promulgated by the Federal government on the 5th of January, 1912.

Mr. Akers seems to have condensed in twelve concise paragraphs the sum total of his findings on the investigation he made in the Amazon, and therein embodies all the suggestions he puts forward as the proper program to be observed by the Brazilian government.

First. He suggests the new method of tapping.

Second. He suggests the establishment of an agricultural school for training tappers and teaching modern methods of preparing latex, and preparation of rubber for shipment.

If we now turn to pages 144, 145, *et seq.*, we find in Chapters II and III of the Law for Economic Defense of Rubber, promulgated on the 5th of January, 1912, the most elaborate provisions for all that Mr. Akers suggests, and very considerably more than he mentions.

Third. He suggests the erection of adequate machinery at Pará and Manáos for washing and preparing scrap rubber previous to shipment. By referring to page 146 of the said report, we find that the Federal government offered prizes for the erection of rubber refineries, not only in Pará and Manáos, but also in Ceará, Bahia, Recife and São Paulo.

Fourth. He suggests the appointment of expert rubber planters to superintend tapping operations and the preparation of rubber for shipment. The creation of the Superintendency of the Economic Defense of Rubber covers all these items in the most elaborate form.

Fifth. He advises the Federal government to enter into agreement with the northern governments for the reduction of duties. This is fully provided for in the said law, and we have already stated why it cannot be done from one day to another.

Sixth. He suggests the urging of the Federal government to carry out the establishment of central hospitals, etc., and goes on to mention the very law we are citing and which he should know is being carried out, no less a personage than the world-famed Dr. Oswaldo Cruz having been entrusted with the task.

Seventh. He suggests the establishment of centres of supply, where the employers of labor can purchase at reasonable rates all articles necessary for the workmen in the rubber dis-

tricts, and in this manner bring about a substantial reduction in the cost of living. If we turn to the said law we find that the government has provided for the creation of several agricultural farms precisely for the said purpose.

Eighth. He urges the establishment of one or more experimental stations in order to demonstrate economical methods of producing rubber and foodstuffs. If we turn to page 153, we find a complete law, making every provision conducing towards the point he suggests.

Tenth. He suggests arrangements to facilitate the acquisition of tapping tools and agricultural machinery at low costs. By virtue of the said law, all such machinery and tools are allowed to come into the country duty free; and it would be impossible for any government to do more than this, within reason.

And last, but not least, the introduction of the system of planting food crops in the alluvial deposits on the river banks after the annual floods. Mr. Akers will be astonished to hear that this system does not require to be introduced, for it has long been prevalent along the Amazon. The only reason why it is not carried on to greater extent is because there is not enough labor. To remedy this Mr. Akers suggests the introduction of coolies from China. The law already referred to provides for the introduction of native and European labor, for which suitable accommodations are to be built in the principal points along the Amazon.

So far, then, one wonders whether the Federal government was inspired by Mr. Akers or his associates, in the drafting of the good laws, or whether Mr. Akers chose to follow the government's trodden path, only emphasizing here and there the points of great importance to the interests he represents.

But on this score, we, at least, have not the slightest doubt. For almost every item provided for in the said laws was fully commented on by Dr. Passos de Miranda Fitho at the Rubber Congress held in Manaus in 1910 and the one which followed it in Rio in 1911. We have not the slightest doubt that Brazilians are quite capable of solving their own problems and have disposed of the whole matter, satisfactorily, so far as making legal provision and voting the appropriations were concerned.

Mr. Akers' report then could have been made for no other purpose than to infuse enthusiasm in European financial circles, and we are pleased to see this done so cleverly and effectually. The question is whether the same purpose could not have been attained by a simpler method. For, as we have said, the world wonders who is it that has authorized Mr. Akers to issue a report of such pretensions on the Amazon valley, when it seems that no one in authority ever asked him to do so. We are quite certain that Brazil is ever ready to accord the bond holders of any enterprise within its limits every reasonable opportunity to improve their position and satisfy themselves of the solidity of the guarantees they hold, and it looks a bit out of the ordinary to adopt the indirect methods that are constituted by what is now known as the "Akers' Mission."

BRAZILIAN CREDIT IN THE FIRST RANK.

In writing the "Folha do Norte," Mr. Franklin Morse remarks: "The future of South America is the subject of serious discussion among the principal European bankers. According to the classification made by Lombard Street of the South American countries, there figure in the first rank Brazil, Argentina and Chile; in the second rank—Peru and Uruguay; and in the third rank Bolivia and Colombia. The remaining South American countries are considered as outside the limit of financial operations of a serious character."

BRAZILIAN GEOGRAPHICAL CONGRESS.

The Brazilian Geographical Congress, which has met in recent years at Rio de Janeiro, São Paulo and Curuyuba, is to be held this year at Recife, on September 7. A geographical exhibition will remain open until September 16.

A HANDSOME RUBBER MEDAL.

An interesting souvenir, prepared by the thoughtful Brazilians at the New York Rubber Exposition, was a disc of Fine Pará



Rubber, to which was attached a rosette of satin ribbon in colors that artistically blended those of Brazil and the United States. This was put up in a sumptuous satin-lined box. It was planned as a decoration for the presiding officer at the Rubber Banquet that closed the Exposition. An error prevented its being worn, but it adorns the editorial sanctum and is one of the very pleasant souvenirs of a memorable occasion. Aside from its value as a remembrance it has a very distinctive prophetic value. The fact that a Brazilian is able to produce easily and cheaply a product in every way the equal of the finest plantation biscuit, points to what may be done with the latex of the wild *Hevea* once it has been found to be necessary.

NEW AKERS EXPEDITIONS.

As reported in the June issue of THE INDIA RUBBER WORLD, Mr. Akers had arrived in Pará, where a demonstration took place of the Oriental method of tapping.

The "Folha do Norte" states that he would leave Pará for Europe and the East in June, with the view of organizing two supplementary expeditions. These expeditions, it is added, are intended to develop the service of instruction on the Upper Purus and the Upper Juruá rivers, as well as in the region of the Lower Amazon.

BRAZILIAN PREFERENCE AGAIN IN FORCE.

As explained in the May issue of the INDIA RUBBER WORLD, page 409, certain American goods have hitherto enjoyed a preference in Brazil. This preference has amounted to 30 per cent. on wheat flour and 20 per cent. on some 15 other articles, including manufactures of rubber. These preferences were withdrawn by the Brazilian government on April 9, but have since been restored under the decree of May 6.

BRAZILIAN GOVERNMENT INCREASES GRANT TO RIO EXHIBITION.

At the request of the Minister of Agriculture, the Brazilian Minister of Finance has given instructions for the credits allotted the fiscal delegations of the various states for defraying the expenses connected with the Rio Exhibition to be increased by Rs. 208:480\$000 (\$69,493). The amount will be divided *pro rata* between the delegations of Amazonas, Pará, Maranhão, Ceará, Rio Grande do Norte, Parahyba, Pernambuco, Alagoas, Sergipe, Bahia, Parana and Goyaz.

THE EAST PASSES BRAZIL.

For the first time in the history of rubber, the production of rubber from the Far East for the year ending June 30, 1913, will exceed the output of rubber from Brazil. According to the closest estimates, the Brazilian production for the year will be 42,000 tons, an increase of about 2,000 tons over last year—while the output from the East will be somewhere from 50,000 to 54,000 tons, or 20 per cent. more than the Brazilian product. Incidentally, it might be mentioned that the price of fine Pará on June 1st was 90c a pound as against \$1.10 a pound one year ago.

Should be on every rubber man's desk—Crude Rubber and Compounding Ingredients; Rubber Country of the Amazon; Rubber Trade Directory of the World.

Important Meetings at Pará.

ON May 1, a largely attended meeting responded to the invitation of the Pará Commercial Association, for the purpose of discussing the crisis now existing in Amazonia and the measures necessary for improving present conditions. The meeting had more than local significance, being held under the presidency of Admiral José Carlos de Carvalho, a prominent member of the group of noted Brazilians at the recent New York Rubber Exposition, and federal deputy from the State of Rio Grande do Sul. In his opening remarks the admiral referred to his visit to New York in company with Dr. Jacques Huber, whom he termed a "friend of Amazonia," expressing his appreciation of the information he had acquired on that occasion. He promised to do all in his power to further the objects of the meeting.

Speaking of the high cost of freights, he stated that it was due to the excessive size of the crews which the river steamers were obliged to carry under existing regulations. A measure introduced dealing with river navigation had been defeated in the Federal Senate for political motives. Other measures of that character are now engaging legislative attention.

Dr. Ferreira Teixeira then addressed the meeting, expressing the opinion that instead of taking up the many complex divisions of the subject it would be advisable to try to solve two fundamental questions:—The reduction of the cost of producing rubber, and the attainment of a higher scale of value through the careful preparation of a fixed type of the article.

In connection with the first question, he advocated the diminution of municipal taxes and the lowering of the freights of the "Lloyd Brasileiro" for articles of food, as well as the revision of customs tariffs on food, clothing and fuel. He likewise urged the abolition of inter-state and other taxes on imported provisions, as well as a lowering of freights by Amazon steamers.

With regard to the preparation of rubber, the speaker considered the initiative rested with the *Seringueiro*. He likewise expressed the opinion that the latex should be strained before coagulation and that the rubber should be extremely dry; that is, should not contain any water. "Sernamby," however, should be washed, thus completely eliminating foreign substances.

The general conclusions urged by the speaker included the formation of a large association, composed of those who are interested in the agricultural, industrial and commercial prosperity of Pará. He likewise urged the nomination of a large committee for the purpose of convening a congress at Pará at the earliest date possible, representing the three last-named interests, in which the State of Amazonas and the Territory of Acre would have the right of taking part.

Dr. Jacques Huber then spoke and submitted various samples of plantation rubber.

An opportunity was then afforded those present of examining samples treated by the processes of Dr. Cerqueira Pinto and Senhor José Amando Mendes. For both of these processes superiority is claimed over the eastern product. Deputy Vianna Coutinho referred to his process for rubber smoking with an apparatus of his own design, as well as to a *machadinho*, also of his invention. Specimens of both the above appliances, with samples of rubber prepared by the first-named method, were on exhibition.

Telegrams were sent to the president of the Republic and the president of the Senate, expressing the hope that measures would be taken to reduce the cost of living.

Various tapping appliances were shown by their respective inventors and referred to a committee under the presidency of Dr. Jacques Huber.

RUBBER CONGRESS BEING ORGANIZED.

A committee was appointed to organize a congress at an early date. The committee was under the presidency of Admiral de Carvalho; the members being: Dr. José Ferreira Teixeira, Dr. J. Huber, Dr. J. Barbosa Rodrigues, Jr., Dr. Manoel José Rebello, Jr., Dr. Banto José de Miranda, Claudino Romariz, Dr. Luciano Castro, Dr. Antonino Emiliano de Sousa Castro, J. A. Fonseca, Manoel Barreiros Lima, Francisco Coutinho, Jr., Dr. Manoel Lobato, Col. Avelino de Medeiros Chaves, and Manoel Vianna Coutinho.

The purpose of the congress will be to deal with the present rubber crisis and to develop rubber preparation.

Following out this resolution, the principal members of the committee and others interested in the subject assembled next day at the headquarters of the Pará Commercial Association under the chairmanship of Dr. Ferreira Teixeira.

The officials chosen to organize the congress were: President, Admiral Carvalho; vice-president, Dr. José Ferreira Teixeira; secretary, José Amando Mendes; treasurer, Manoel J. Rebello, Jr.; assistant secretary, Dr. Casimiro Gomez da Silva. Various other committees were likewise appointed which will deal with the reduction of export taxes and the abolition of inter-municipal imposts on flour, fish (fresh, dried and salted), meat, fruit, etc.

Among the resolutions adopted was one providing for sending circulars to all inventors of appliances for the extraction of rubber, asking them to forward these articles to the congress, accompanied by photographs and brief descriptions. The object of another resolution was to ask from the principal Amazonian navigation companies and shipowners the exemption from freight of exhibits intended for the congress.

The preparation of a program has been entrusted to a special committee, which is composed of. Señores Dr. Sousa Castro, Dr. J. Huber, and Amando Mendes. It was decided to invite a number of prominent men connected with the rubber industry to join the committee of organization.

The congress is scheduled to open on August 15th next, under the presidency of Dr. Enéas Martins, governor of the State of Pará. Several meetings of the committee have taken place, at which various details were elaborated.

MEETING OF PARA AVIATORS.

Following the two meetings already mentioned, the Pará aviators and exporters (in conjunction with members of the "Defesa da Borracha"), held a meeting on May 9, to consider the proposal of Admiral Carvalho. This proposal, as reproduced by the "Folha do Norte," was based on the alleged want of care in the preparation of rubber, particularly of "Sernamby." It urged that it is for the dealers to insist on the adoption of a system of curing, and on the establishment of the types best fitted to compete with plantation rubbers, thus improving the quality while reducing the expenses. For "Sernamby" there should be a perfectly clean quality, free from all impurities. For the quality known as "fine," a type should be established prepared on the system of J. A. Mendes, Vianna Coutinho, Cerqueira Pinto, or on any other system with like advantages.

Señor Rebello urged the gradual adoption of improvements without giving up the present system. Dr. Ferreira Teixeira expressed his approval of the principal features of Admiral Carvalho's proposal, advocating the elimination of the "Entre-fine" and "Cameta Sernamby" grades. Dr. Huber remarked that a transformation of system could not be general, as the type made in the form of balls was preferred by foreign consumers. The smoking ought to be continued as at present, if no prejudicial elements were present. The speaker coincided

with those who had advocated restricting the grades to Sernamby and "Fine," eliminating the "Entrefine" type.

Señhor Vianna Coutinho opposed the elimination of "Entrefine" rubber, as there are regions which cannot produce the latex required for the "Fine" grade.

The resolutions finally adopted were:

1. The elimination as far as possible, of the "Entrefine" grade, by the diffusion of the processes of smoking in sheets (Amando Mendes and Vianna Coutinho), and of the chemical processes of Cerqueira Pinto and others, when approved by the governor of the state.

2. The elimination of the type of "Cameta Sernamby."

3. The improvement of Island "Sernamby."

4. The manufacture of Caucho by the Cerqueira Pinto process or other equivalent process.

Considerable interest attaches to the above meetings. The proposed establishment of a large association is doubtless expected to facilitate the carrying out of the various suggestions which have lately been made for the development of the Brazilian rubber industry.

WASHING RUBBER IN MANAOS.

A LETTER has just been received from Manáos—which is reproduced below—which is interesting not only because of its reference to the subject of washing machines, treated at length in the May issue of THE INDIA RUBBER WORLD, but particularly as giving a concrete illustration of the new activity in the Amazon rubber country in the campaign for producing cleaner and cheaper rubber, so as to be able to compete with the greatly increased product of the East. The samples referred to in the letter look like good, hard, dry rubber, and if the washing cost is not too great the work of these machines ought to prove entirely satisfactory.

H.C. PEARSON, ESQ.,

EDITOR OF THE INDIA RUBBER WORLD, NEW YORK:

Dear Sir—In the issue of the INDIA RUBBER WORLD dated May 1, 1913, I noted with interest what you say about rubber washing and washing machines on pages 396 and 411.

As an interested party in the matter, I beg leave to state that rubber washing is indeed an accomplished fact in Manáos. At about the time when the famous law about the "Defesa da Borracha" was passed, I decided to try whether it would be possible to find a suitable machine for washing such rubber as comes to our market full of impurities, and which suffers in consequence a heavy reduction in price. For this purpose I took with me to Europe a certain quantity of dirty coarse, and after having seen various other systems of machines I visited Messrs. Werner & Pfeleiderer in Cann-

stadt, who showed me their new rubber washing machines and washed in my presence the samples I gave them. As the result was a satisfactory one I bought two of their machines. They offered me the agency for their machines in Northern Brazil, which I accepted.

The above-mentioned two machines have been installed in the stores of the well-known firm of J. G. Araujo, of Manáos, and were operated recently in the presence of his Excellency the Governor of the State of Amazon and the local superintendent of the "Defesa da Borracha," as well as of other authorities and merchants.

My object is not to wash fine rubber, but only such qualities as would not find ready buyers in the consuming markets, i. e., dirty coarse, dirty caucho balls, etc.—which would have to be sold at very low prices and would only impair confidence in good qualities. By sending a clean and uniform quality to the consuming markets I hope to establish a standard quality.

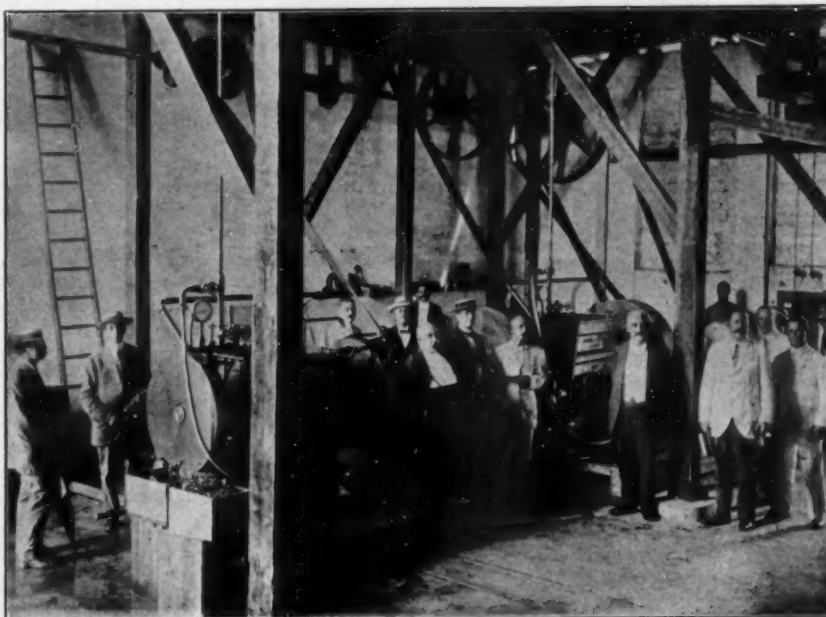
Enclosed I beg to hand you some photos showing the installation of the two machines, and by same mail I am sending you a sample of washed coarse.

I do not claim that the system is a perfect one as yet, and I shall be thankful for any hint which may be useful for its improvement.

I am, dear sir, yours very truly.

Manáos, May 26, 1913.

PH. SCHLEE.



RUBBER WASHING MACHINES INSTALLED AT MANAOS.

AMAZON EXPLORERS QUIT THEIR SHIP.

In the April issue of THE INDIA RUBBER WORLD mention was made of the expedition sent out under the auspices of the University of Pennsylvania for the purpose of exploring the upper tributaries of the Amazon. The expedition set sail on the 19th of March, in the "Pennsylvania," a yacht of 184 tons burden. Unfortunately, the "Pennsylvania" has not lived up to expectations. It sprang a leak soon after leaving Philadel-

delphia and had to put in at Newport News. It was also found necessary to make further repairs on arrival at Charleston; and this experience was repeated off the Florida coast, so that they put into Jacksonville, where they abandoned the yacht. The expedition, however, will proceed to the Amazon, where a new boat suitable for exploration purposes will be secured.

DR. HUBER AND THE TURIN EXHIBITION OF 1911.

A banquet was lately offered at the Café da Paz, Pará to Dr. Jacques Huber and Señhor Jayme Abreu, two of the three representatives of Pará at the Turin Exhibition of 1911. Appropriate reference was made to the memory of the late Commander João Rodriguez Martins, the third delegate, deceased since the exhibition.

THE RUBBER TRADE IN AKRON.

By a Resident Correspondent.

THE City of Akron, which was the first city in the United States to use an automobile fire patrol, has just let contracts which will more adequately protect its various industries, among which are those manufacturing rubber goods. These contracts provide for the installation of motor apparatus and will do away entirely with all that now drawn by horses. The city has installed in its water plant heavier pumping engines, so that the present pressure is much stronger.

Contracts for the new reservoir which will dam the waters of the Big Cuyahoga River for almost two miles, with a maximum depth of 33 feet, have been let, and the water mains connecting the large reservoir with the power reservoir are rapidly being placed in position; so that within two years' time Akron will have a supply of pure water sufficient for a population several times the present one, including the needs of the rubber plants, several of the larger of which use as much water as many of the smaller cities of this country, ranging in size from 20,000 to 50,000 people. The new supply taken from the Cuyahoga River, together with that from the Tuscarawas River and the Portage Lakes, will give the City of Akron and vicinity enough water to adequately take care of the anticipated growth in its industries and population for many years to come.

Saturday afternoon, June 7, a fire broke out in the general offices of The Goodyear Tire and Rubber Co. among the office supplies which filled the basement. The fire before discovered affected the gas pipes, so that gas began to escape. There being no exit for the smoke, it became very dense, and on account of this and the gas the fire was very hard to locate. Six lines of hose were laid and it took three hours to subdue the blaze. When finally conquered the water lay several feet deep upon the basement floor, and although the total damage caused by the fire was not great, much damage was done by smoke and water.

The volunteer fire department of the company aided the city department. Mr. Shiller, from the master mechanic's office, one of the volunteers, stuck with the best of the veterans and finally had to be carried out, with several of the city force, overcome by smoke and gas. Both city and volunteer departments gave excellent service.

W. B. Miller, former secretary and sales manager of the Diamond Rubber Co., leaves in a week for his new home at Beverly Farm, Massachusetts. Miller's West Hill home was sold to Henry Manton, vice-president of the First-Second National Bank.

"No, I am not going into business again," said Miller. "I'm just going to loaf."

The Swinehart Tire and Rubber Co. is rapidly completing its large new addition, which will give space to almost double its present tire output.

As a tribute to Mr. Mason of The B. F. Goodrich Co., who has done so much for his home city, the school board has named the new school building which is being erected in East Akron the Mason School.

Many employes of the various rubber factories have, during the last few years, built homes on the west side, so that Akron is compelled to erect a new high school building, not far from the Perkins homestead.

The chemical section of the Goodyear Technical Society has the promise of the noted industrial chemist, Dr. John A. Shaeffer, chief chemist of The Picher Lead Co., Joplin, Mis-

souri, to give them a lecture on "The Smelting and Casting of Lead and the Preparation of Lead Compound." He has many lantern slides illustrating the lead mines in Missouri, and will give the main facts concerning the manufacture of litharge and sublimed white lead, largely used in the compounding of rubber.

The Goodyear Tire and Rubber Co., through its vice-president, C. W. Seiberling, made the following statement: "Sales of The Goodyear Tire and Rubber Co. over the last six months show the following gains, as compared with the previous year: April, 1913, 8 per cent.; March, 1913, 2 per cent.; February, 1913, 24 per cent.; January, 1913, 45 per cent.; December, 1912, 52 per cent.; November, 1912, 31 per cent. Although figures for May are not yet in, officials expect the gain in that month to be about 15 per cent.

"When we started this year everything indicated that we would do a \$40,000,000 gross business. Now, however, indications are for figures considerably below that amount and we shall be satisfied with a 25 per cent. increase in sales as compared with a year ago, which would bring our gross business in 1913 up to about \$32,000,000 or \$33,000,000. There appears to be a general slowing up in business all around and the rubber goods trade has suffered as well as the rest.

"We have now about 6,100 employes, but could use at least 1,500 more. We are manufacturing about 5,500 automobile tires per day, as compared with 6,500 before the strike. In addition to the automobile tires, we are also putting out about 1,000 each of bicycle and motorcycle tires daily.

"So far as the reduction in tariff on rubber goods is concerned, I do not think that the proposed schedule will hurt us. We are well prepared to meet any foreign competition that may be offered.

"The Goodyear company is now going into the manufacture of mechanical rubber goods on a far greater scale than has ever before been attempted. Within two or three years we expect to be able to manufacture from \$2,000,000 to \$3,000,000 of mechanical rubber goods a year. We are not doing over \$500,000 in this department at the present time.

"It has never been, with but one exception, the policy of the Goodyear management to sell any new stock that it might be deemed advisable to put out. This stock has always been distributed in the form of stock dividends. The Goodyear company has a little over \$10,000,000 stock outstanding of an authorized issue of \$15,000,000. The company is now paying 12 per cent. in dividends annually on its common stock. This dividend is paid in a single disbursement at the close of the fiscal year. It is the present intention of the management to make a distribution at the close of 1913 at least as large as that of a year ago."

The Goodyear Tire and Rubber Co. recently shipped to the Far East a large consignment of specially built rubber tires for use on jinrikishas.

C. A. Swinehart, for several years sales manager of the Swinehart Tire and Rubber Co., of Akron, Ohio, has become general manager of the Vulcan Rubber Co., of Erie, Pennsylvania. This company has been manufacturing mechanical rubber goods and inner tubes and now, under the management of Mr. Swinehart, will take up the manufacture of commercial truck tires. The company, in which Mr. Swinehart and Mr. H. F. Burger, formerly with the Swinehart company, have acquired an interest, is incorporated for \$200,000. Mr. Swinehart has designed a solid tire for which he claims special merit and which this company will place upon the market.

Emil Gammeter, sales manager of the Universal Stock Calender Shells Co., Cadiz, Ohio, and also of "Aluminum

Flake," has gone to Europe, where he expects to organize sales agencies for his products.

On Saturday, June 14, Akron and Columbiana, Ohio, and all the towns and cities between, were the scene of one of the most "exclusive affairs" of the season in automobile circles. It was the occasion of "the Firestone Foremen's Home-



FIRESTONE FOREMEN'S HOMESTEAD DINNER.

stead Dinner," Mr. Firestone's invitation list being strictly limited to factory superintendents and foremen, with officials and directors of the Firestone Tire and Rubber Co. Even so, a fleet of about 30 cars was needed, the guests numbering 145. Charles S. Whitman, District Attorney of New York and candidate for Mayor, was the only guest drawn from outside the "Firestone Family." In addressing the diners—"down on the farm"—Mr. Whitman told of his life-long friendship with Mr. Firestone and of his years of boyhood spent in Columbiana County, Ohio, during which time he was a frequent visitor at the Firestone Farm.

THE RUBBER TRADE IN CINCINNATI.

By a Resident Correspondent.

GENERAL conditions of the local rubber trade have not changed materially the past month. The retail trade is moderately active for footwear, clothing and sundries, while the wholesale business has been fair in all lines. The constantly increasing use of automobiles this season has benefited local tire houses, who report activity in that line. While almost every known make of tire has local representation, there is no complaint to be heard from dealers, jobbers and branch houses of lack of trade.

The day of leather sole and heel Oxfords for summer wear is past. This is the verdict of local shoe manufacturers who this year were obliged to put on the market, in competition with the big shoe factories of the country, Oxfords and pumps with rubber soles and heels. It is the unanimous opinion of the shoe manufacturers locally that the use of rubber soles and heels will ultimately result in the adoption of rubber bottoms for all kinds of shoes, as the demand will be for this class of footwear after the public becomes accustomed to the use of rubber soles and heels. What effect the adoption of rubber soles will have upon the shoe market with reference to price remains to be developed.

An interesting part of the exhibit which was held in connection with the annual convention of the Building Owners

and Managers held in this city June 12-14, was the display of rubber accessories used in the modern office buildings and skyscrapers throughout the country. This part of the display was interesting to the delegates to the convention, as well as to the casual visitor to the exhibition, as it gave visitors an insight into the large number of uses to which rubber is applied in the manufacture of necessities for the modern office buildings of today. One of the largest exhibitors was the Dryden Rubber Co., of Chicago. The Atlas Rubber & Belting Co. of this city also had a unique display.

"Not guilty of stealing rubber, goodbye." This was the note found by the coroner beside the body of John Thompson, receiving clerk at the C. H. & D. railroad yards, who committed suicide by cutting his throat. Several weeks ago it was reported to the police that a number of tires, consigned to local dealers, were taken from the depot. According to testimony brought out at the inquest, it developed that Thompson was driven insane by companions who jokingly accused him of stealing the rubber tires.

The B. F. Goodrich Co. opened temporary employment offices in this city enlisting men to go to Akron to learn the rubber trade. It was announced at the employment office, which was established at the Grand Hotel, that on account of the increased business the company needs about 2,000 additional workmen, and to this end efforts are being made to recruit this small army of men from the various large cities within a reasonable distance from Akron.

James Albert Green, one of the directors of the Cincinnati Rubber Manufacturing Co., was appointed by the Common Pleas Judges of the County as a member of the Public Library Board of Trustees.

Judging from reports by proprietors of the various automobile supply houses, it would seem that this part of the country has taken on an exaggerated case of automobile craze. For example, A. C. Davis, of Coughlin & Davis, says: "Not in the seven years of my activity in the auto supply trade has there been so enormous a demand for accessories and so annoying an inability on part of the manufacturers to furnish them with any degree of promptness. Daily we are telegraphing and using long distance telephone, but without avail, in hurrying the shipment of goods that are in any wise staple. Similar complaints are heard in salesrooms of nearly every other supply house in the city."

The death on June 5 of Mrs. Cora Hayward Crawford, wife of Dr. J. M. Crawford, one of the founders of the Cincinnati Rubber Manufacturing Co. and for several years president of that company and now one of its directors, awakened sincere and widespread regret in the circles of the city in which for years she had been a gracious and winning personality. During the six years that Dr. Crawford was United States Consul General at St. Petersburg she was a resident of that city. Some six years ago she made an extensive tour of Mexico, and her observations and impressions have been given in a delightful volume, "The Land of the Montezumas."

The American Manufacturing and Distributing Co., of Louisville, has placed on the market a tire puncture cure known as "Prest-O-Ceal." The company has launched a big advertising campaign to introduce the product, and headquarters have been opened at 123 East Seventh street. It is claimed for the new product that it will seal up punctures of any size. The product is a paste-like amalgam of mineral and fibrous material.

The Ohio Rubber Co., which is retiring from the retail trade in this city and will operate a big wholesale house here—announcement of which was made in this column last month—started a "retail discontinuation sale" June 10 to continue until the big retail stock carried by the company is disposed of. The Ohio company, through the efficient management of Edward G. Howard, enjoys an excellent wholesale trade in this city and vicinity. It was because of this large trade locally that the company decided to discontinue the retail business, as it was in a way competing with its own customers. The company will act as jobbers or selling agents for the leading rubber companies of the country.

* * *

The annual "Orphans' Parade and Outing," as sponsored yearly by the Cincinnati Automobile Club, eclipsed this year all previous efforts. Approximately 300 machines were used in the parade, while 1,700 "kiddies" were made happy by reason of a delightful "joy ride." To encourage participation in the outing by auto owners, the committee this year having charge of the parade arranged for prizes to be awarded owners taking part. The local tire houses were the most liberal contributors of prizes, there being no less than ten different makes of inner tubes offered as prizes. The prizes consisted of every conceivable accessory used about an automobile, and they were hotly competed for.

* * *

Fred A. Geier, vice-president of the Cincinnati Rubber Manufacturing Co., has come prominently to the front in the past month in connection with Cincinnati's philanthropic work. He has been elected president of the Council for Social Agencies, which was incorporated last month, and at a recent meeting of "the better housing movement," which has in prospect the erection of modern homes for workmen, the rents of which are to be suited to the income of the occupants, Mr. Geier subscribed \$10,000 to the fund being raised to carry on the work.

THE RUBBER TRADE IN CHICAGO.

By a Resident Correspondent.

THE trade in rubber tires is brisk, as of course it ought to be at this season of the year, for this is practically the rush season on tires. Old tires carried over on machines through the winter have by this time begun to show more or less wear and require replacing. There is considerable activity in mechanical rubber goods, particularly of the kind used on the large Western farms—rubber belting, for instance, for outdoor machinery. And in the footwear line it can be safely predicated that the popularity of the rubber soled shoe has reached Chicago. There is a very large sale for this exceedingly comfortable summer shoe.

* * *

The convention of the National Building Managers' Association, held at Cincinnati last month, was attended by many representatives of the local rubber houses, several of whom had exhibits at the convention and who report the returns therefrom as entirely satisfactory. The event is an annual one. It is a gathering of the managers of buildings throughout the country, for the purpose of getting new ideas on building equipment. Local dealers exhibited their various lines of fire hose equipment for modern office buildings, and the other necessary requirements of such buildings, as rubber matting, etc.

* * *

W. H. Salisbury & Co. are featuring a new garden hose mending device which is proving popular with the user of garden hose. It is a metal contrivance with clincher ends. A brass tube inserted in the hose couples the place to be mended, and the ends are clinched into the hose; which insures a firm grip.

The price is moderate, which further commends its use to the consumer.

* * *

How ridiculous the rubber trade of Chicago is being made by the "shoddy" stores—of which an exposé was printed in this column last month—is indicated by the following paragraph clipped from the widely read humorous column of one of the Chicago morning papers: "As all raincoat and trunk dealers are constantly in a state of being overstocked or going out of business and selling below cost, I would suggest that all of the raincoats be packed in all of the trunks and shipped to some far off country where both commodities will find a profit producing market."

Despite individual fuming and complaining among the dealers in regard to the situation, no concerted action has been taken to offset the effect of these thoroughly unreliable houses. All agree that something must be done, but no plausible plan has as yet been presented. In the case of similar, unscrupulous dealers in the furniture trade one house took it upon itself to expose their business methods in all of the daily papers; which plan proved effective, keeping customers away from those places.

* * *

A bill for receiver was filed against the \$1,000,000 Dutch Guiana Culture company, a rubber planting concern with an Arizona charter, and with offices in the City Hall Square building. The petitioner, Roy C. Holbrook, secretary of the company, alleges waste of stockholders' funds by other officers. L. C. Parker is president and treasurer; James A. Crawford and Louis T. Orr are directors.

THE RUBBER TRADE IN RHODE ISLAND.

By a Resident Correspondent.

THE annual sales conference of the representatives of the National India Rubber Co., of Bristol, with delegates from various States in the Union, was held at Bristol early in the month. There was a two days' gathering, during which business and pleasure were so combined as to detract from neither. Conferences were held with Vice-President LeBaron C. Colt at the offices of the company; and the wire department of the corporation was specially discussed in regard to the betterment of the business in insulated wire, which is one of the chief products of the Bristol plant.

The sales people arrived on Thursday morning, June 12, and a business meeting was at once held. The ground covered during the past year was considered at length, and reports and suggestions were offered by the delegates from the different sections. On Thursday evening Vice-President Colt entertained the visitors at his home on Smith street, when brief addresses were made by all present and Fay's orchestra rendered musical selections. Another business session was held the following forenoon at the company's offices, after which the party was entertained at a Rhode Island clambake at the farm of Col. Samuel P. Colt at Poppasquash Neck. Later a baseball game was played, the married and the single men forming opposing teams. The group was then photographed, and after general sightseeing the conference was ended. At the clambake were: Vice-President LeBaron C. Colt, Treasurer A. H. Emerson, F. L. Dunbar, W. R. Davis, J. W. Franklin, W. J. McCaw and J. T. Ashton, all of Bristol; A. P. Eckhart, M. F. King, George E. Shaw, R. M. Campbell and Rudolph R. Rosa, of New York; P. F. Lyons and M. E. Flaherty, of Chicago; William A. Wardwell, of Boston; E. E. Curry, of Atlanta, Ga., and H. B. Squires, of San Francisco.

* * *

The Revere Rubber Co. has commenced the erection of a considerable addition to its one-story frame building on Eagle street, this city, to be used for office purposes.

A system of pensions is being established in the factory of the National Rubber Co. at Bristol, and for several months past half a dozen of the former employees of the concern have been receiving weekly pensions. Two of the beneficiaries under the pension system, John Newbold and William H. Young, had served in the factory for upward of forty years each.

A new shipping shed, of wood with a concrete foundation, has been erected at the factory of the National India Rubber Co. at Bristol, for the shipment of insulated wire. It is 160 feet in length and 70 feet in width.

The Woonsocket Rubber Co. of Woonsocket, recently called for fifty girls to learn rubber shoemaking. The company is running to capacity to keep up to the demands on these goods.

The Woonsocket Rubber Co., the Joseph Banigan Rubber Co. and the Marvel Rubber Co., all subsidiaries of the United States Rubber Co., held annual meetings of stockholders on May 27. The meeting of the Woonsocket Rubber Co. was held at the company's office at Woonsocket, and Walter S. Ballou, Samuel P. Colt, Walter A. Read, John W. Ellis, James Harris, George Schlosser and Clarence H. Guild were elected directors. All of the seven, with the exception of Messrs. Schlosser and Guild, were re-elected, these two filling the vacancies caused by the death of Edward R. Rice and the resignation of Homer E. Sawyer. Walter S. Ballou was re-elected president and Clarence H. Guild, of Providence, secretary and treasurer. Homer E. Sawyer was chosen general manager in place of Walter S. Ballou, who previously held the latter position in addition to being the corporation's president. George Schlosser, of Woonsocket was again chosen general superintendent and Henry C. Wagner, of Woonsocket, superintendent.

At the meeting of the Joseph Banigan Rubber Co. Walter S. Ballou, Samuel P. Colt, Walter A. Read, John W. Ellis and Clarence H. Guild were elected directors. Messrs. Read and Ellis are new men on this board, taking the places of Homer E. Sawyer, resigned, and Edward R. Rice, deceased. The directors again chose Walter S. Ballou president and Clarence H. Guild secretary-treasurer. Mr. Sawyer was appointed general manager in place of Mr. Ballou, who had previously held that position.

The meeting of the Marvel Rubber Co. resulted in the election of Samuel P. Colt, Walter S. Ballou, Walter A. Read, John W. Ellis and James Harris as directors. Samuel P. Colt was re-elected president and Clarence H. Guild secretary-treasurer. Homer E. Sawyer was appointed general manager in place of Col. Colt.

Among the corporations doing business in Rhode Island that have a corporate excess of \$50,000 or more, according to the latest assessment made by the Rhode Island Tax Commission, whose report was filed a few days ago with the General Treasurer for collection, are the following: American Emery Wheel Works, excess \$51,450.58, tax \$205.80; American Multiple Fabric Co., excess \$99,897.70, tax \$399.59; American Wringer Co., excess \$1,252,579.21, tax \$5,010.31; Joseph Banigan Rubber Co., excess \$1,338,900, tax \$5,355.60; Bourn Rubber Co., excess \$101,407.11, tax \$405.62; Collyer Insulated Wire Co., excess \$62,580, tax \$250.32; Davol Rubber Co., excess \$109,079.62, tax \$436.31; Glendale Elastic Fabric Co., excess \$229,733.76, tax \$918.93; International Rubber Co., excess \$78,506.99, tax \$314.02; Mechanical Fabric Co., excess \$636,676.93, tax \$2,546.70; National India Rubber Co., excess \$1,845,566.95, tax \$7,382.26; Phillips Insulated Wire Co., excess \$1,543,680, tax \$6,174.72; Revere Rubber Co., excess \$851,-

627.42, tax \$3,406.50; Washburn Wire Co., excess \$691,922.68, tax \$2,767.69; Woonsocket Rubber Co., excess \$955,512.28, tax \$3,822.04.

C. L. Stockbridge, of Boston, sales manager for the Hood Rubber Co., was a member of the party which accompanied the delegation of the Institute of Automobile Engineers of England on their visit to a number of the manufacturing plants in this city and other sections of New England early this month.

William J. Golden, formerly of Bristol, who went to Muskegon, Michigan, a year ago last April to take the foremanship of the mechanical department in the factory of the Vulcanized Products Co. of that city, was recently appointed superintendent of the plant. He was for a number of years foreman of the mechanical department at the factory of the National India Rubber Co. at Bristol.

Col. Samuel P. Colt, president of the United States Rubber Co., gave a dinner at "Linden Place," his summer home at Bristol, on Friday, May 30, at which he entertained friends from New York, Washington, Boston, Providence and Bristol. On June 1 the party left this city for Boston en route for the Colonel's hunting camp—as described in the general news columns of this issue.

"Two years ago today we started in business here in Providence," said A. N. Bannister, local agent for the Goodyear Tire and Rubber Co., of Akron, Ohio, speaking reminiscently on June 13. "At that time we had five employees. In the two years this number has grown to 13 and the business has grown correspondingly."

A cablegram received at Woonsocket early in the month stated that Hugo Hammann died in Paris, France, May 28, where he was stricken several weeks ago. Mr. Hammann was for more than twenty years an overseer in the Millville rubber mill of the Woonsocket Rubber Co. and later he was superintendent of the Joseph Banigan rubber mill at Olneyville. From the latter place he went, four years ago, to the Kaufmann Rubber Co. at Berlin, Ontario, as superintendent. He remained there for three years, returning to East Blackstone last year. On April 12 he sailed for Paris on a business trip and while there suffered a shock, which resulted in his death. He was well known throughout rubber circles of New England.

Mr. and Mrs. Walter S. Ballou will sail on the Steamship "Baltic" of the White Star Line on July 10 for a motor trip through England and Scotland. They expect to be absent for several weeks.

The contract for the big refrigerating plant to be erected by the Revere Rubber Co. at its Valley street plant, this city, was awarded a few days ago to a Providence contractor. The building is to be one of the largest of its kind used by rubber manufacturers in this part of the country. It will be used in cooling the rooms where the rubber goods are stored. The dining hall for the use of officials of the concern is nearly completed. This will be a great accommodation to the heads of the several departments. A number of other improvements are under contemplation, but very few will be attempted for the present, as the concern is very busy, operating two full shifts—night and day.

"The latest step in the growth of the Goodyear Tire and Rubber Co.," said A. M. Bannister, manager of the Provi-

dence branch, a few days ago, "is the purchase of a large tract of ground at Killingly, situated in the extreme northeast corner of the State of Connecticut. On the property is a large cotton mill, four stories high and 400 feet in length, where will be made a large part of the tire fabrics, hose and belting ducks so extensively used by the company. There are also on the property houses for 350 employes, a store, a large boarding house and an assembly hall. The cotton factory will be equipped with the most modern machinery and will run steadily at a uniform output on fabric for the exclusive use of the Goodyear Tire and Rubber Co."

The steel bridge across the tracks of the New York, New Haven & Hartford Railroad Co., on Asylum road, which Col. Samuel P. Colt has built to connect his country estate at Bristol with his ocean drive on the west shore of Poppasquash, has just been completed. The work of preparing the pedestals for the bronze bulls which are to be placed on each side of the entrance to Asylum road is now going on. The foundations underground are of concrete. Each figure will rest on a massive Georgian marble slab, four feet wide, nine feet long and about eight feet high. The bronze bulls will be of life size. A white marble balustrade with a total length of 162 feet will extend on either side, and the figures will be about 35 feet from the main street.

Robert Gregg, who was for many years employed in the packing department of the National India Rubber Co. at Bristol, died at his home in that town recently, in his 88th year. He was a native of Ireland but had lived in this country about forty years.

The Consumers' Rubber Co.'s plant at Bristol, employing about 300 hands and manufacturing rubber covered insulated wire and rubber footwear, was closed the first of July. The plant is operated by the Walpole Rubber Co., of Walpole, Massachusetts. A. P. Baldwin, of the Walpole company, stated on June 24 that the Consumers' Rubber Co.'s plant would be closed for the purpose of making an inventory of its stock, and that before it is reopened a meeting of the stockholders will be called to define the business policy of the concern. "It may be two or three weeks after closing before the plant will reopen," said Mr. Baldwin. "It is not to be closed permanently, however. The recent failure of the Atlantic Bank of Providence had nothing at all to do with the closing of the plant," he said. "The company had some money on deposit in that bank, but it was by no means as much as the company owed the bank, but the bank is not worrying about that. We have not had any notes called on us."

The Walpole company took over the Consumers' a year ago last month, after the Consumers' company—then owned and operated by Terrence McCarthy—had gone into the hands of a receiver. After the Walpole company took over the plant Mr. McCarthy was engaged as manager, a position which he still retains. Mr. Baldwin could not say when the meeting of the stockholders would be called.

The Continental Rubber Works, of Erie, Pennsylvania, expect to make an addition 200 feet in length and 76 feet in width to their plant, increasing the factory space nearly 6,000 square feet.

THE RUBBER TRADE IN SAN FRANCISCO.

By Our Resident Correspondent.

CONDITIONS on the coast are rather quiet, not so much owing to anything peculiar to local affairs as to the general tightening of the money markets of the world and the tendency of all enterprises to hold up as much as possible at the present time.

The Ralphs Pugh Co., a comparatively new concern in the local rubber field, reports that business is moving along in a fairly busy fashion and that they feel well satisfied with the progress they have been making. This firm has decided to move into larger quarters, where they can carry a complete stock of boots and shoes of the Beacon Falls Rubber Shoe Co., whose lines they represent. They carry also a general line of rubber goods. The new store has practically been selected and will be in the vicinity of First and Mission streets.

The Crandley Rubber Co. has secured the Manhattan Rubber Co.'s account for this coast. William Crandley reports that business with his firm is satisfactory and is showing steady growth.

W. H. Gorham, of the Gorham-Revere Rubber Co., has just returned from a trip to the Orient, where he visited the principal cities and not only enjoyed a very pleasant vacation, but booked some highly satisfactory orders.

C. C. Case, vice-president and general manager of the Revere Rubber Co., is now in San Francisco on business, making his headquarters with the Gorham-Revere Rubber Co.

Mr. Anderson, manager of the local branch of the Electric Hose & Rubber Co., with a store on Howard street, is contemplating a transfer to the Chicago branch of the company, to take charge of the electrical supply department there.

Mr. Rigdon, of the Gorham-Revere Rubber Co., has left for a trip to the factory in the East in the interest of the company.

E. F. White has sold his vulcanizing plant in Los Angeles to W. F. Simpson. Mr. Simpson has also recently purchased the Ninth street Vulcanizing Works at Los Angeles, formerly owned by F. C. Wells.

The Ernest Rubber Co. has been organized at Chico, California, and has opened up for business in an attractive store.

C. A. Muller, of Oakland, California, has recently bought out the business of the Bay Cities Tire Co. of that city.

Elmer E. Woods, as proprietor of the Auto Tire & Vulcanizing Co. of Santa Barbara, California, has filed an involuntary petition in bankruptcy.

The Always Air Sales Co. has opened a branch store in San Francisco at upper Van Ness avenue. This company manufactures a fluid compound to be inserted in tires for the purpose of automatically filling punctures and preventing blowouts. Barney Oldfield is at the head of the local sales company, as vice-president and general manager, while Walter Hempel is in active charge, with Mr. Griffin as sales manager.

L. C. Rockhill, sales manager of the Goodyear Tire & Rubber Co., has returned to San Francisco after a tour through the Northwest, during which he visited Seattle and Spokane. After a short conference here he will return to the home office at Akron, passing through Los Angeles on the way. He is not only enthusiastic over the possibilities of the tire business in the Northwest, but he is impressed with the almost incredible work which is being done toward good roads in country districts, smooth traveling boulevards being made through country so rough and mountainous as to appear inaccessible.

Peart & Elkington, of Oakland, have taken the agency in that city for Ajax tires, arrangements having been made through Hughson & Merton of San Francisco, Pacific coast distributors.

The French-American Rubber Co. has drawn up incorporation

articles, and organized as a corporation at Long Beach, California, with a capital stock of \$25,000. The original incorporators are W. Harbart, F. I. Lee, P. R. Rader, of Long Beach, and one or two others, from Colorado. The plan is to erect an automobile tire factory at Long Beach, at which 200 men will be employed.

Long Beach has also been selected as the factory site of the new Panama Rubber Co. This concern has purchased property at Long Beach and will manufacture automobile tires. They promise to erect a plant at a cost of \$500,000 and to employ at least 500 men.

THE RUBBER TRADE IN TRENTON.

By a Resident Correspondent.

MUCH to the satisfaction of manufacturers and the more skilled of the rubber workers, labor differences here have been settled and strike talk ended. The various plants in this city are operating day and night shifts, despite tariff uncertainty.

Clarence Arnold Hutchinson, one of the energetic young men of the Essex Rubber Co. staff, was married June 10 to Miss Mabel McCullough, youngest daughter of Mrs. Eliza McCullough of this city. The employees of the plant and officers of the company presented the bridegroom with a handsomely designed silver service.

The Thermoid, Empire, Home, Whitehead and Ajax-Grieb tire making concerns report big business the past month, the force of operatives being worked to the limit to keep up with the rush of orders. The \$5,000 prize contest for chauffeurs who make the best records in the use of Ajax tires has boosted Ajax sales considerably.

From the post of office boy to that of general manager of the New York State and Canadian branch of the Empire Tire Manufacturing Co., of this city, represents the business progress made by Raymond Paddock, Trenton boy, within ten years. Last year he sold \$191,000 worth of tires and other rubber goods manufactured by the local concern. Mr. Paddock is a son of Mr. and Mrs. Frank Paddock of this city. He attended the local schools and Rider Business College. At the age of seventeen he decided he had sufficient education to enable him to enter the race for riches and fame, but was undecided whether to become an editor, lawyer or business man. His decision in favor of the business world was sagacious, if not unique, and later events have justified the wisdom of his choice. Riding along on his bicycle he noticed a sign hanging on the office door of the Empire Rubber Co. on Clinton avenue. He stacked his wheel against the building, took down the sign, carrying it into the office of the president.

"Boy, why did you take down that sign?" the president asked somewhat brusquely.

"You don't need it up there now, I'm the boy," replied young Paddock.

The president was amused by the audacity of the lad and he was immediately engaged. He was so invariably prompt and diligent in the performance of his duties as office boy that when one day an invoice clerk left the company's employ, he was in line for and received promotion to the position thus vacated. But he didn't remain long at the invoice desk—he was jumped to a clerical position, and then he began to sit up nights studying the intricacies of the rubber business. From invoice clerk he went into the factory, in a minor position, where in less than a year he was given charge of the tire department. His next opportunity was to demonstrate his ability as a salesman on the road, and from the start he was successful. Three years ago when the company decided

to open a branch house at Buffalo to supply the trade in upper New York State, Michigan and Canada, Paddock was the unanimous choice of the officers of the company; and he is today recognized as one of the keenest young men in the rubber industry.

The Eureka Tire Co. filed at the County Clerk's office on June 18 articles of incorporation, with an authorized capital



RAYMOND PADDOCK.

of \$100,000, the incorporators being John E., Peter D. and Frank W. Thropp.

On June 20 Commissioner LaBarre recommended to the City Commission that the Hamilton Rubber Co. be given the contract for furnishing 5,000 feet of rubber hose for the fire department, at a cost of 85 cents a foot.

THE BROOKVILLE RUBBER CO.

The Brookville Rubber Co. has been incorporated in Trenton, New Jersey, for the purpose of manufacturing, purchasing and selling all kinds of mechanical rubber goods. The capital stock is \$100,000, and the incorporators are Edward A. Fischer, Ezra Evans, Charles A. Joslin and William Groff, Jr.

THE SPECIALTY INSULATING MANUFACTURING CO.

The Specialty Insulating Manufacturing Co. has recently located its factory at Hoosick Falls, New York, where it is now running with about 70 employees. This company, which is capitalized at \$30,000, was formerly located at Pittsfield, Massachusetts, under the name of The Specialty Manufacturing Co., and was incorporated under the laws of Massachusetts.

A NEW RUBBER COMPANY IN MILFORD.

The Askam Rubber Co., of Milford, Connecticut, has filed its certificate of incorporation with the secretary of state of that State. The capital stock is \$150,000, and the incorporators are Isaac W. S. Hawes, William F. Askam and LeRoy Askam.

MACHINE SHOPS CLOSED FOR TWO WEEKS.

The machine shops of the New England Butt Co. at Providence are closed for two weeks' vacation, beginning June 28. They will open again on July 14. The office and the foundry will continue to run as usual.

News of the American Rubber Trade.

ADVERTISING MEN STUDY GOODRICH IDEAS.

THE Associated Advertising Clubs of America, including a membership of some 10,000 advertising men, held their annual convention in Baltimore from June 9 to 15. Among other features, the advertising campaigns of three different companies—large national advertisers—were presented in full to the members of the convention, as a study of this interesting science. One of the three companies selected was The B. F. Goodrich Co. It gave a complete exposition of its advertising methods, including newspaper and magazine work, bill-board display and road signs—which, by the way, now cover 30,000 miles of American highways. It also presented a full description of the Goodrich service system—which, though perhaps in the mind of the public would not be associated with advertising, still is the very best advertising that a tire company can engage in.

DUTIES ON HARD RUBBER PARTS OF FOUNTAIN PENS.

Notwithstanding the fact that our present tariff schedule may all be changed in a short time, it is none the less interesting to note the rulings in various lines of rubber manufacture under the rates now in force.

Some time ago the firm of Schrader & Ehlers imported the barrels, necks and caps that go to make up fountain pens, minus the pens. The collector of the port of New York assessed them at 35 per cent. ad valorem, as being manufactures of hard rubber, under paragraph 464. The importers protested that the goods were fountain pens and dutiable as such at 30 per cent., under paragraph 187; but the Board of General Appraisers overruled them and now the United States Court of Customs Appeals has also sustained the collector, deciding that assembled parts do not constitute the complete fountain pen, under the tariff act of 1909.

COLLEGE BOYS IN THE GOODYEAR FACTORY.

Many college men from all over the country are planning to work during the summer vacation in the factory of The Goodyear Tire & Rubber Co., Akron, Ohio. The company recently requested the college men in its employ to write to their colleges asking them to suggest promising candidates for factory positions; and the responses have been numerous.

"We like to have college men with us," says C. W. Seiberling, vice-president of the company. "We like their spirit and enthusiasm, and I firmly believe that the spirit of loyalty, which is a distinctive feature of the Goodyear concern, emanates largely from having so many clean-cut young fellows around. The broad viewpoint and training these men receive has helped wonderfully in fostering friendly relations with our customers."

TEHUANTEPEC RUBBER CULTURE CO. REPORT.

The report of the president of the Tehuantepec Rubber Culture Co., dated May 13, 1913, makes interesting reading, although it does not paint the immediate rubber prospects of the company in very bright colors. Owing to the exceedingly unsettled condition of affairs in Mexico, very little work has been done on the plantations during the last year. In the opinion of the president, the best course for the company to take is to devote its energies—for the immediate future at least—to some annual crops, particularly sugar. He remarks: "In recommending the planting of sugar cane for your consideration I can say from many years' intimate association with the sugar industry that it is a profitable crop, and if the present favorable indications with experimental planting are confirmed sugar cane will be a safe crop to plant at Rubio"—which is the name of the company's plantation.

THE REPUBLIC CO.'S NEW CLUB HOUSE.

The April issue of THE INDIA RUBBER WORLD contained a brief description of the new club house being built by the Republic Rubber Co. of Youngstown, Ohio, for the company's 1,500 employees. Here is a picture of the building, which shows its attractive appearance. It is 60x130 feet in size, is located



THE CLUB HOUSE.

just across the street from the company's main offices, and contains bowling alleys, pool tables, reading rooms, lunch rooms, shower baths, and all the other accessories and conveniences which could add to the comfort and happiness of the Republic's working force.

FACTORIES HELPING THE COLLEGES.

It has been the aim of all American colleges during the last fifteen years to make their instruction as practical as possible. They are no longer satisfied to send out their students furnished simply with book knowledge; they try now to equip their graduates as far as possible with such practical knowledge, particularly in the sciences, that they can put on the harness of actual work without too great a feeling of strangeness. The University of Minnesota arranged to have the graduating class in chemistry visit, during the last few weeks of the term, a number of industries where chemistry comes into play. As part of this tour they visited, early in June, the Federal Rubber Mfg. Co. works at Cudahy, a suburb of Milwaukee. The students first made a careful study of the laboratory connected with the plant and then went into the factory, where the work of the chemist was shown in the actual production of tires. Incidentally, the company entertained the students at a lunch, which undoubtedly still further impressed on their minds the practical value of factory inspection.

THE WALPOLE CO. OFFERS SOME 6 PER CENT. NOTES.

The Walpole Tire and Rubber Co., Walpole, Massachusetts, is offering directly to the public \$350,000 of three-year 6 per cent. convertible notes, being a part of an authorized issue of \$750,000. The notes are dated April 1, 1913, due April 1, 1916, and are convertible at any time before maturity into the 7 per cent. cumulative stock of the company.

The offering price on the present issue is par, but in addition the notes carry several inducements. The company guarantees the notes to purchasers "free from all taxes. Furthermore, the note holders are offered preferential terms on all goods manufactured by the company. Both gross and net earnings of the company for the first four months of this year have shown nearly a seventy-five per cent. gain over the corresponding period of 1912. The notes constitute a first lien on all the assets of the company, amounting to \$3,000,000, and after the issue has been sold no further obligations will be issued until retirement of the notes.

BOSTON WOVEN HOSE & RUBBER CO. SALESMEN MEET.

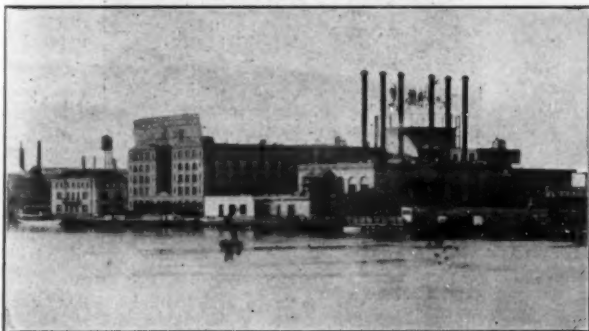
During the week of June 9 to 14 the annual salesmen's convention of the Boston Woven Hose & Rubber Co. was held at the executive offices at Cambridge, Massachusetts. Representatives from New York, Buffalo, Philadelphia, Pittsburgh, Chicago, St. Louis and Seattle, as well as traveling salesmen from other cities, were present. Business conditions were discussed and policies outlined for the coming year.

On Wednesday evening, June 11, Mr. George E. Hall, general manager, entertained the visiting salesmen and department heads at the Engineers' Club in Boston. Dinner was followed by the reading of papers bearing on subjects of interest. Here are some of the subjects discussed: The Sale of Manufactured Products, The Successful Salesman, Keeping Up with Production, Co-operation, The Evils of Over-Confidence in Our Own Ability, Factory Problems, To What Extent Should We Protect the Jobber, "Quality Is Remembered Long After Price Is Forgotten," Closer Relations Between Salesmen and Correspondents, Standard of B. W. H. Quality, and Team Work vs. Individual Play.

On Friday the salesmen and heads of departments were entertained by Mr. H. B. Sprague, treasurer, at luncheon at the Tedesco Club, Swampscott. Some of the party spent the afternoon on the golf links, while others enjoyed an automobile ride along the North Shore. In addition to the general manager and treasurer, the outing was attended by the president of the company, Mr. B. F. Spinney, and by directors Mr. J. Newton Smith and Mr. Albert M. Creighton.

NEW BUILDINGS FOR THE DETROIT PLANT OF THE UNITED STATES TIRE CO.

Some idea of the magnitude of the proposed additions to the old Morgan & Wright plant, now the Detroit factories of the United States Tire Co., may be gained from the fact that the addition will afford approximately 1,000,000 more feet of floor space. Among the buildings proposed are a laboratory 82 x 35, three stories high; a warehouse 93 x 235, six stories high; manu-



UNITED STATES TIRE CO., DETROIT.

facturing buildings 60 x 315, six stories high, and 230 x 60, six stories high; machinery shops 80 x 170, one story high; 50 x 165, four stories high; 50 x 120, three stories high; 50 x 120, three stories high, and three storehouses each 93 x 170 and six stories high; two manufacturing buildings each 47 x 35, four stories high. As already stated, this will make an approximate increase in floor space of 1,000,000 square feet, and will render necessary an increase from 2,500 to 6,000 employees. All of these plants are to be equipped with the most improved machinery.

CHANGING ITS NAME AND INCREASING ITS CAPITAL.

Notice has been filed at Columbus, Ohio, by the Bayne-Subers Tire & Rubber Co., of Cleveland, of a change in its name to the Subers Fabric & Rubber Co., and an increase in its capital from \$250,000 to \$1,500,000.

CLARENCE H. LOEWENTHAL.

Clarence H. Loewenthal was born in New York, June 10, 1885. He is a Columbia man, and before entering the U. S. Rubber Reclaiming Co., of which he is now the secretary, he spent three years in the banking house of Ladenburg, Thalmann & Co. He began his rubber career in the Buffalo



CLARENCE H. LOEWENTHAL.

factory of the United States Rubber Reclaiming Co. in 1906, where he spent two years. He is particularly interested in tennis and he is an amateur athlete of recognized ability. He is a conspicuous member of the younger set in the rubber trade. He sailed for Europe on the Imperator on the 25th of June and expects to return to this country early in August.

RUBBER STAMP MAKERS HOLD A CONVENTION.

Manufacturers and dealers interested in rubber stamps, stencils and other marking devices—comprising the membership of the International Stamp Manufacturers' Association—held their second annual convention in Minneapolis from June 24 to 27. There were several hundred present—from all parts of the world. While there were many social features, the greater part of the convention's energy was devoted to the discussion of various matters of commercial importance to rubber stamp manufacturers.

FROM SAN FRANCISCO TO BALTIMORE BY MOTOR.

E. B. Hanson, vice-president and general manager of the San Francisco Exposition Tour Sales Co., and J. A. Clairmonte, recently finished a notable run from San Francisco to Baltimore, covering the distance in 18 days. The last lap, from Omaha to Baltimore, 1,430 miles, was made in 71 hours actual running time. Mr. Hanson attributed this remarkable record to absence of all mechanical troubles, and particularly to the fact that not a tire had to be changed. His car was equipped with the Firestone "Non-Skids."

GOODYEAR MOTORCYCLE TIRE PRICES REDUCED 10 PER CENT.

S. A. Falor, manager of the motorcycle tire department of the Goodyear Tire and Rubber Co., of Akron, announces a reduction of 10 per cent. in the price of motorcycle tires to dealers, consumers and jobbers, the reduction taking effect June 14. He says that these lower prices are not attributable so much to the lower price of crude rubber as to the company's increased business in this particular line of tires. They are now making 1,000 motorcycle tires a day and expect soon to be making 1,500.

TRADE NEWS NOTES.

The Mercer Rubber Co., of New York, Inc., 95 Broad street, New York, has been organized with a capital of \$10,000 to take the New York agency of the Mercer Rubber Co., of Hamilton Square, New Jersey, which manufactures mechanical rubber goods and specialties. The president of the New York company is W. A. Dale, who has been connected with the New York rubber jobbing trade for twenty-five years.

The Swinehart Tire Agency has recently been opened at 726 Main street, Buffalo, for the distribution of the Swinehart solid and pneumatic tires in Western New York and Pennsylvania. The president of this new agency is C. A. Couch, and the secretary and treasurer F. P. Georger.

By a vote of the stockholders at a meeting held at Pittsburgh early in May, the business of the McGraw Tire and Rubber Co. of Pennsylvania was transferred to the McGraw Tire and Rubber Co. of Ohio, a corporation with a capital stock of \$1,000,000 and with a factory at East Palestine, Ohio.

William H. Scheel, of 159 Maiden Lane, New York, who specializes in earths, clays, calcined magnesia and fillers of all kinds—domestic and imported—has the exclusive agency in New York of Ohio aluminum flake, and plans to carry a very large stock of this on hand, in order to be able to fill immediately all urgent requirements of the trade. He occupies a five-story building and has ample room for abundant storage.

The Rosenthal Co., manufacturers of rubber erasers and rubber balls, moved their offices, about the last of May, from 346 Broadway to 45 East 17th street, corner of Fourth avenue, New York, where they have taken considerably larger space.

The Keaton Patents Co., New York City, has been incorporated, with a capital stock of \$100,000, for the purpose of manufacturing rubber tires and pneumatic cushions.

The United States Rubber Reclaiming Co., with factories at Buffalo and executive offices in the Forty-Second Street Building, New York, have recently erected a new factory building equipped with every late mechanical appliance, which will be exclusively devoted to the production of tire stocks, increasing the capacity approximately 100 per cent. in this class of work. The factory is in operation day and night.

The Firestone Tire & Rubber Co., Akron, Ohio, has given out plans for the construction of a four-story brick, steel and reinforced concrete manufacturing plant addition.

A firm of commission agents in a Mediterranean country informs an American consulate that it would like to secure agencies for the sale of American shoes, rubber goods, and hardware. This firm is said to be well rated and would like to import direct. The consular report is No. 11152.

The Ancient and Honorable Artillery Company of Massachusetts—of which Captain Francis H. Appleton has been the commanding officer during the past year—celebrated its 275th anniversary on June 2. The exercises consisted of church services in the morning in the Old South Church, Boston, with a sermon by Rev. A. Horton, D.D., while later in the day a banquet was served at the Copley Plaza hotel.

MR. CUTLER OPENS HIS OWN OFFICE.

Mr. D. A. Cutler, formerly associated with The Continental Rubber Co., and more recently in the development work of the United States Rubber Co., has opened an office at 277 Broadway, where he will operate as an expert in crude rubber research. Mr. Cutler has had an extensive and successful experience in practical work of this sort, and there is every likelihood that his services will be in active request among rubber manufacturers.

A RADICAL DEPARTURE IN ADVERTISING U. S. TIRES.

The tire trade was very much surprised when it became known on June 10 that the United States Tire Co. had abolished its advertising department and that hereafter all the various kinds of advertising put out by this company would be handled through an agency, which is expected to move its offices into the United States Rubber Co. building, Broadway and Fifty-eighth street, New York, where the offices of the tire company are located. The only reason given for this radical change is that it is hoped to effect substantial economies. Mr. Hubbs, who has been in charge of the company's tire advertising department, has no plans for the immediate future.

MR. J. M. GILBERT.

The June issue of THE INDIA RUBBER WORLD contained an announcement of the resignation of Mr. J. M. Gilbert from the position of general manager of the United States Tire Co. and his assumption of the duties of president and general manager of the Lozier Motor Co., Detroit; and some details regarding his career in the tire manufacturing field were given at that



J. M. GILBERT.

time. The accompanying photograph shows that Mr. Gilbert is still a young man; and this fact, together with the possession of unusual energy, and a marked degree of executive ability, promise exceptional success in his management of the Lozier company. He has been acquainted with the automobile trade ever since the time, a dozen years ago, when he was sales manager of the Firestone Tire Co., so that, while he goes from tire manufacture to automobile manufacture, he is very far from being a stranger in his new field.

DIVIDENDS DECLARED.

The B. & R. Rubber Co. has declared a regular quarterly dividend of $1\frac{1}{4}$ per cent. on its preferred stock, and a dividend of 2 per cent. on its common stock—payable July 1 to stockholders of record on June 21.

The Canadian Consolidated Rubber Co., Limited, declared its usual quarterly dividend of $1\frac{1}{4}$ per cent. on its preferred and 1 per cent. on its common stock, payable July 2 to stock of record June 21.

RUBBER GOODS COMPANY PAYS DIVIDENDS.

On June 4 the Rubber Goods Manufacturing Co. declared its 57th regular quarterly dividend of $1\frac{1}{4}$ per cent. on the company's preferred stock, and a dividend of 1 per cent. on the common stock—both payable June 16.

PERSONAL MENTION.

Mr. James B. Dunlop, who invented the first pneumatic tire, about 25 years ago, recently arrived in America with a number of British engineers who came as guests of the Society of Automobile Engineers.

Mr. Fred J. Wagner, long identified with the automobile business, has been elected vice-president of the Ajax-Grieb Rubber Co., Trenton, New Jersey, manufacturers of Ajax tires.

Mr. Arthur E. Friswell, formerly connected with the Mechanical Fabric Co. and later with the Goodyear Tire and Rubber Co., after a year's vacation in Bermuda is back in the States with the thought in mind of again entering the tire field. Mr. Friswell's experience and capabilities are such that it goes without saying that he will not long remain idle.

Mr. Fred Moses, formerly with George A. Aiden & Co., of Boston, is now operating on his own account as a broker in crude rubber at 220 Devonshire street, Boston.

COLONEL COLT'S CAMPING PARTY.

The summer camp of Colonel Colt, president of the United States Rubber Co., called "Camp Colt," and located at Kidney Pond, Maine, is one of the most attractive spots in that state. It has been the Colonel's custom for a number of years to take quite a party of guests to his camp during June. Continuing this custom, he started from Providence on June 1st with a party of about fifteen guests, including his brother, Senator LeBaron B. Colt, Mr. Walter S. Ballou and Mr. Nathaniel Myers, of the United States Rubber Co. The other members of the party were: Dr. Calvin S. May, Colonel and Mrs. Harold J. Gross, Mr. and Mrs. E. A. Barrows, Rev. G. L. Locke, Miss Beatrice Colt, Hon. Mrs. William Beresford, Miss Gertrude Barrows, Miss Ruth Anthony.

The party broke camp and returned home on June 14th.

COMMODORE BENEDICT BACK FROM HIS CRUISE.

Commodore E. C. Benedict arrived at his home in Greenwich, Connecticut, on June 5th, after a six weeks' cruise, including a long trip up the Amazon river. This is the Commodore's fifth sail up the Amazon, in which he has a double interest, for, being a director of the United States Rubber Co., he is interested in the supply of crude rubber from the Amazon, and, in addition, he installed on that river a few years ago a system of wireless telegraphy. The trip was made on the Commodore's yacht "The Oneida," which has an over-all length of 199 ft. and carries a crew of 36 men. The Commodore was accompanied by a party of friends, including Mr. and Mrs. Colgate Hoyt.

MR. COE AND MISS PIKE MARRIED IN JAPAN.

The consummation of a little romance which will interest many of the rubber footwear trade, was a marriage at the American Consulate in Yokohama, Japan, the latter part of June, when Mr. Kersey Fell Coe and Miss Louise G. Pike became husband and wife.

Charles A. Coe, the Eastern selling agent of the United States Rubber Co., is a resident of Medford, a suburb of Boston. Chester J. Pike, for many years with that company, and now managing the advertising campaign for the Hub-Mark rubbers, also resides in Medford. Here their children received their pre-collegiate education, and Kersey Coe and Louise Pike were schoolmates. Mr. Coe graduated from Williams College, and later entered the employ of the Standard Oil Co., and three years ago was sent to Japan.

But before starting on his long journey the young folks became engaged, and it was finally decided that as Mr. Coe could not come to America for his bride, she should go to him. Miss Pike started from Boston on Wednesday, May 28, for San Francisco. She was met by friends in Chicago, and in San Francisco embarked on the "Shimyo Naru" on June 4.

Mr. Coe met her on the arrival of the steamer at Yokohama, where the wedding took place, after which the couple proceeded to Otaru on the Island of Hokkaido, the northernmost of the large islands which compose the Japanese Empire, where Mr. Coe will be in charge of the local office of the Standard Oil Co., a position to which he has just been promoted. Many handsome gifts went forward on the same steamer, for both the young people have hosts of friends in Medford and Boston.

THE NEW TREASURER OF THE UNITED STATES RUBBER CO.

Some men seem to get through life without ever being visited by the consequences of their own acts, but not all men escape. Some men get caught with the goods, and have stern justice meted out to them. To the latter class belongs Mr. W. Guy Parsons, who has just got what he richly deserves. He has just been made treasurer of the United States Rubber Co. after an even twenty years of service in the financial department of that big corporation.

Mr. Parsons was born approximately forty-five years ago, in a little town in Kansas, but when he reached the reflective age



W. G. PARSONS.

of five he became convinced that while Kansas was a fine place for raising corn and cyclones, it was no place for future treasurers of \$120,000,000 corporations—so he left for Chicago. That town did well enough until he was 19 years of age, when he concluded that though Chicago was the literary center of the Western Hemisphere, large affairs of finance were arranged in New York; consequently he removed to the metropolis. That was in 1885. Eight years later, when the United States Rubber Co. was formed, he took charge of the bookkeeping department. Evidently his work was not so badly done, for very soon he was promoted to the cashiership; thence to the assistant auditorship; another promotion and he was made auditor; still another boost and he became assistant treasurer. And now, having climbed every round on the ladder—at least all the upper rounds—he has reached the top rung in the financial department, and has been made treasurer—a job of no small dimensions when you consider the size of the corporation, its various ramifications and its multitudinous interests. Here is a clear case where efficiency has come into its own.

Incidentally it might be mentioned that personally he is a thoroughly likable man, perfectly genial even though living in Brooklyn; and a few years ago, when he weighed somewhat less than now and used to play on the Rubber Company's nine, he could be relied upon to hammer out a five-base hit almost every time he came to bat.

THE MONATIQUOT RUBBER CO.

Probably no branch of the rubber trade has shown greater advance during the last five years than the reclaiming industry. Several new enterprises have been launched during this period and remarkable growths have been attained. Prominent among these is the Monatiquot Rubber Works Co., of South Braintree, Massachusetts, which calls its product "Naturized Rubber."

This company first began to manufacture in April, 1910, and from the first, its brands (known as "The Four Good Indians") were popular with the manufacturers. The demand has shown continuous increase, rendering necessary substantial additions to its plant during the past three years, especially during the last twelve months. The company has found it necessary to erect three new buildings to take care of the healthy growth of its trade; so that the plant, as it stands today, is of entire brick construction and embodies three separate and distinct power plants. During this time a reinforced concrete dam on the Monatiquot River was built, a third engine installed and extensive mechanical equipments were added.

The company has a 1,000-foot siding on the Brockton Division of the N. Y., N. H. & H. R. R., besides being located on the Plymouth Division; and convenient and prompt shipment of manufactured product is further facilitated by means of a new power truck, which is used in the handling of

rush orders to the Boston freight terminals.

The company's original method of making few rather than many brands is still maintained and the wisdom of this policy is reflected in the demand for the "Four Good Indians"—Squantum, Monatiquot, Samoset, and Massasoit—who have recently been joined by Wampatuck, now known as the "Fifth Good Indian." Each stock occupies a distinct field of its own, and the processing of all is rigorously guarded so that there is no possibility of confusion.

An effective organization, of which Robert C. Harlow is president and James H. Stedman treasurer, has brought to the Monatiquot Rubber Works a degree of success more than commensurate with its three years of existence.

AMERICAN AND EUROPEAN TIRES.

One of the leading manufacturers of tires in America stoutly champions the American tire against those of European manufacture and believes that they will make their way abroad against European brands even at the higher prices which it is necessary to charge for them. His theory is that as American roads are not nearly as smooth as European roads, and as the conditions here to which tires are subjected are very much harder than those in Europe, the American manufacturers make a stronger and tougher tire to meet these severer conditions, and that the Europeans are gradually finding out the better qualities of our tires.

DR. DANNERETH AND A CO-OPERATIVE LABORATORY.

Dr. Frederick Dannereth, the rubber consulting chemist who acted as honorary secretary at the Rubber Conference held in connection with the International Rubber Exposition last fall, is interesting a number of rubber manufacturers in a co-operative laboratory. He has prepared a list of twenty-three arguments in favor of such an institution. He calls attention to the fact that the larger corporations have finely appointed laboratories and employ a large number of chemists who are at work constantly on the solution of various rubber questions, in the interest of these particular corporations. But the smaller manufacturers are not able to compete with the large ones in this research work, and, in his opinion, the only way in which they can engage successfully in this laboratory competition is by co-operation. He believes that a co-operative laboratory could be equipped at a cost not exceeding \$5,000 and maintained at an annual cost of about the same amount. Such a laboratory would, he believes, serve a vast number of useful purposes, not only

to those companies that banded together for this co-operative work, but to the trade at large. It could be used as a central bureau where disputes regarding crude rubber and reclaimed rubber and manufactured articles could be referred.

Anyone in the trade who would like to get the details of this project can do so by

writing to Dr. Dannereth at Passaic, New Jersey.

A FINE COMPLIMENT FOR MANHASSET FABRICS.

The following letter has been received by the Manhasset Manufacturing Co., producers of tire fabrics and yarns, with mills at Putnam, Connecticut, and offices at 317 Howard Building, Providence. It is self-explanatory.

Rutherford, N. J., June 3, 1913.

Manhasset Mfg. Co., Providence, R. I. Attention of Mr. Ballou.

Dear Sir: Allow us to congratulate you on the clean construction of your duck. In the 3rd Annual Indianapolis Speed Race we used your fabric which you constructed for us, being style No. 1101 48" C. S. I. fabric and marked special racing tire.

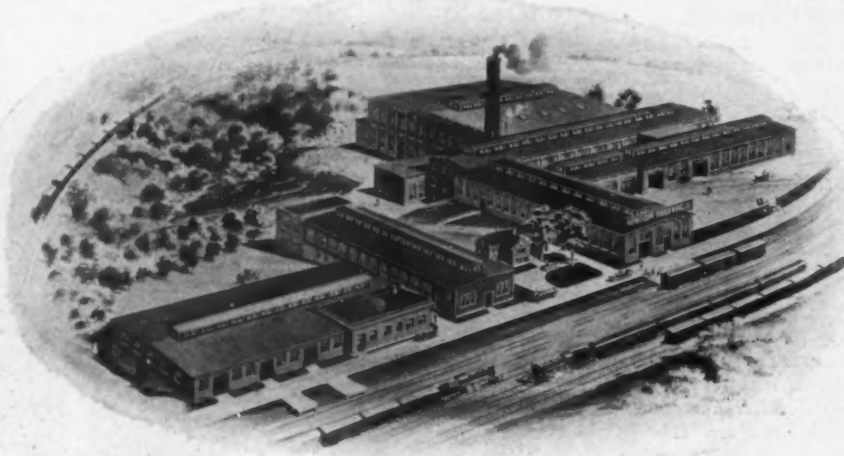
These tires constructed with your duck by us went through the hottest race on the hottest course and made the world's record for endurance on any track, going the 500 miles without a change of tires, and 11 laps, or 27½ miles, on the day previous and still good for more mileage. These tires were the only four tires to go through this great race without a change.

We would like you to give us the construction of fabric used in this roll of duck for our files and in ordering further material of this sort so we may know exactly the way we wish it, in the event of your firm not knowing the exact construction.

Mr. Mulford will use our tires in the 600-mile race at Tacoma, Wash., and as soon as things are settled we will be in line for another roll of this same duck. Wishing you success with your fabric and hoping to have the pleasure of hearing from you, we remain

Yours truly,

BRAENDER RUBBER & TIRE CO.
FRED L. BRAENDER, MGR.



MONATIQUOT RUBBER WORKS CO., SOUTH BRAINTREE, MASSACHUSETTS.

THE RUBBER CLUB OUTING.

THE annual Midsummer Outing of the Rubber Club of America will be held on Monday, July 14, at the Belmont Springs Country Club, in one of the beautiful suburbs of Boston.



BELMONT SPRINGS COUNTRY CLUBHOUSE, BELMONT, MASS.

There will be all the attractive features to which the club mem-



ANOTHER VIEW OF THE BELMONT SPRINGS COUNTRY CLUBHOUSE.

bers have been accustomed in the past, and more. The outing



VIEW ON THE GROUNDS OF THE BELMONT SPRINGS COUNTRY CLUB.

is in charge of the Sports Committee, consisting of Frank R. McKenna, of the Bourn Rubber Co., chairman; E. L. Phipps,

of the United States Rubber Co., W. L. Pitcher, of the Easthampton Rubber Co., Frank H. Appleton, Jr., of F. H. Appleton & Son, and W. J. Kelley, of Arnold & Zeiss; and they are hard at work on the most interesting program they can devise. There will be golf, baseball and tennis, of course, and other sports.

The Belmont Springs Country Club has exceedingly attractive grounds. Here are three convincing proofs of the fact, viz.: Two photographs showing different views of the club house and another photograph showing a wonderfully fine avenue of trees leading out from the club house.

The details of the day's outing will be sent to club members within a few days.

NEW INCORPORATIONS.

ALLING-LOCKWOOD Co., Inc., May 23, 1913; under the laws of New York; authorized capital, \$10,000. Incorporators: Clarence E. Alling, Stamford, Connecticut; Arthur E. Alling, New Haven, Connecticut, and Frederick F. Lockwood, Binghamton, New York. Location of principal office, Binghamton, New York. To manufacture and deal in rubber, etc.

Benton Raincoat Co., May 23, 1913; under the laws of Illinois; authorized capital, \$5,000. Incorporators: Carl Cohn, Leo S. Kosichuk and Jacob Schwartz. Location of principal office, Chicago, Illinois. To deal in men's clothing and wearing apparel, etc.

Costello Seat Co., May 13, 1913; under the laws of Illinois; authorized capital, \$10,000. Incorporators: George W. Costello, Edward J. Hennessy and William R. Swisler. Location of principal office, Chicago, Illinois. To manufacture, buy and sell and generally deal in all kinds of automobile seats and sundries.

East India and African Rubber Co., May 12, 1913; under the laws of New Jersey; authorized capital, \$20,000. Incorporators: Edward Walham, 158 North La Salle avenue; James Butler and Ernest Wilfried, 915 North La Salle avenue—all of Chicago, Illinois. To import, export, buy and sell raw products, as rubber, etc.

Federal Sales Co., Inc., June 2, 1913; under the laws of New York; authorized capital, \$10,000. Incorporators: Henry S. Bliss, 726 West avenue; Charles A. Hahl and John J. Henry, 176 Woodward avenue—all of Buffalo, New York. Location of principal office, Buffalo, New York. To deal in rubber goods.

Live-Leather Belt Co., Inc., June 13, 1913; under the laws of New York; authorized capital, \$1,000. Incorporators: Isal Weinman, 1800 Seventh avenue; Leon Heinmann, 1018 East 163d street, and Joseph Jacobs, 1348 Boone avenue—all of New York. Location of principal office, New York. To manufacture leather and elastic belts.

New Idea Tire Co., April 30, 1913; under the laws of Delaware; authorized capital, \$500,000. Incorporators: F. R. Hansell, Philadelphia, Pennsylvania; George H. B. Martin and S. C. Seymour, both of Camden, New Jersey. To manufacture and deal in tires, etc.

Phillips Tire Co., April 14, 1913; under the laws of North Carolina; authorized capital, \$10,000. Incorporators: W. L. Phillips, J. E. Craddock and C. D. Cooper—all of Asheville, North Carolina.

Pneumatic Rim and Tire Co., May 12, 1913; under the laws of Delaware; authorized capital, \$200,000. Incorporators: R. Boyd Cooling, Clarence J. Jacobs and Harry W. Davis—all of Wilmington, Delaware. To manufacture and deal in pneumatic tires for engines, etc.

Positive Vulcanizing Co., May 26, 1913; under the laws of Iowa; authorized capital, \$10,000. Incorporators: W. G. Sandford, Charles Huber and J. Reed Lane—all of Davenport, Iowa. To manufacture tire vulcanizers, etc.

THE accepted authority on South American rubber—"The Rubber Country of the Amazon," by Henry C. Pearson.

THE TYER RUBBER CO.'S NEW FACTORY.

THE new tire factory of the Tyer Rubber Co., Andover, Massachusetts, completed early this year, is in full operation, turning out an average of seven hundred tires per week, which practically equals the steady demand. This new establishment is so modern and up-to-date that a recent visit by the representative of THE INDIA RUBBER WORLD is well worth recording.

The new factory is entirely separate and distinct from the old established factory of this company, which is still used and still fully occupied in the manufacture of its druggists' specialties, which enjoy so enviable a reputation.

The new establishment is at some distance from the other, on the line of the Boston and Maine Railroad. It consists of two



TYER RUBBER CO.'S PLANT.

distinct buildings, each 310 feet long, and parallel with each other, one being 50 feet and the other 60 feet wide. They are solidly built of brick, with most liberal window space. Each is three stories high, while two ornamental and two plainer towers and a tall and graceful chimney cut into the sky-line. The interior is of "factory construction," solid and substantial, as is needed for a building containing rubber working machinery; and every appointment shows thoughtful planning both for present and for future requirements.

The engine room and boiler house are models of modern industrial power plants. The building, of very liberal height, assures space for comfort and convenience and allows for growth by additional engines and boilers. The engines are Rice & Sargent's, of 1,000 horse-power, with direct rope drive. Besides these there are smaller engines for running the 500 kilowatt generators for electric light and power. The boiler room contains four Robb Engineering Co.'s boilers, each 19½ feet long and 72 inches in diameter. There is room for eight more boilers of similar size, when needed. Contiguous to the boiler-house is an immense coal pocket of solid concrete, where coal can be dumped direct from a spur track of the railroad. The pump-room has a fire pump capable of throwing 5,000 gallons of water a minute, the water coming from a private reservoir. Here also are the accumulators for running the hydraulic presses. The Bowser oiling system is used on all the engines.

Inspection commenced with the rear building. First comes the mill and calender room, with ten mills, a drying machine, two 72-inch calenders, and plenty of extra room for further machinery, when the demand requires. Each of these machines, as, in fact, most others throughout the factory, is run by an individual electric motor, thus bringing about a substantial saving of power. In the next room are three washers and all the appurtenances to an up-to-date washing room. The compounding room is large, light and roomy, and is especially convenient in its arrangement.

On the second floor is the machine shop, very thorough and complete; and here are made most of the molds used by the company. This shop is fully equipped for making all the repairs needed in the two factories. The remainder of this floor is used as a drying room. All the rubber used by this concern is air

dried. A complete box factory occupies the entire third story, 310 x 50 feet, and here are made all the thousands of plain and fancy boxes in which the many specialties of the company are marketed.

Between this and the similar building fronting on the street is a receiving and shipping department, with large store rooms on the first floor and basement. A fine macadamized drive-way is now building to reach this department.

In the front building, the first room we enter is the press room, where 21 presses are in constant use for the druggist goods and sundries made by this company. Most of the remainder of this big building is devoted to the manufacture of the "Tyrian Anti-Skid" automobile tires. Nearly two entire floors are needed for this purpose, while the upper floor is used for stock room, packing and shipping.

The second floor is so arranged that the stock and the work go steadily forward, from the time of entering until leaving, with no lost motion and no backward step. There are in use three of the latest improved tire making machines, made by the J. J. Thropp's Sons Co., and more are to be added. These partly made tires then go to the ground floor, where a 12-foot press is molding a tread bearing the anti-skid device for surrounding the rim with the letters "T. T.," for Tyrian Tires. This press gives the threads a pressure of 3,000 pounds to the square inch. In this room are numerous other presses for various purposes, including 4 four-foot presses. Here also is an automatic wrapping machine, and three pit vulcanizers for curing. The tires, which are of white rubber, on coming out of the vulcanizers are thoroughly inspected, after which they are sent to the stockroom in the upper story.

This is in brief a description of the factory pictured herewith, a thoroughly modern establishment, now making nearly 120 tires per day, and with room for a large increase over and above this ticket. The factory is in charge of Superintendent C. M. Riddeck, ably assisted by Mr. F. W. Hodges.

RANDALL AND STICKNEY THICKNESS GAUGE.

Most rubber manufacturers have felt the need of an accurate method for determining the thickness of rubber. Such an object has been attained in the Randall and Stickney thickness gauge, illustrated by the accompanying cut.

In the use of the gauge, the plunger is first raised by pressing down the lever on the left, and the article to be tested is placed on the table under the plunger. The lever is then gently released, when the hands on the dial register the thickness. The long hand registers the thousandths of an inch, and the small hand the tenths. By means of an adjusting screw under the table, the long hand can be brought to the proper position, when it is not on the starting point.

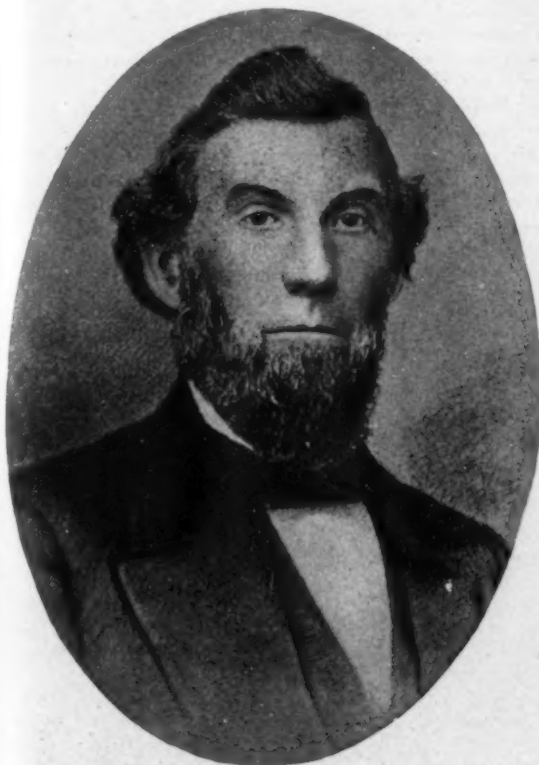
The most important rubber goods manufacturers have taken up this thickness gauge on account of its known accuracy. Another proof of its merit consists in its adoption by the Bureau of Standards, Washington, which has expressed approval of its being exceedingly convenient and very easily read. It is manufactured by Frank E. Randall, 248 Ash street, Waltham, Mass.



The Hodgman Rubber Co. Seventy-five Years Old.

It is an entirely legitimate sentiment—the pride of priority. To have been a long time on the earth proves the possession of the virtues that make for stability and permanence. Survival is the best proof of fitness. St. Augustine boasts because she is the oldest town in the United States, and Harvard plumes herself upon the fact that she is the oldest college in America. So why should not the Hodgman Rubber Co. take a proper pride in being the oldest rubber company in the United States—for this distinction undoubtedly belongs to this company. It was founded in 1838 and has been continuously and actively in existence ever since; and what is even more interesting, it has remained continuously in the hands of the Hodgmans—three generations up to the present time, with a fourth getting ready for active participation.

There were rubber companies before 1838, a number of them; but none survived those early, troublous days. One of them, the Roxbury Rubber Co., famous in its day, founded in 1828, may properly be called the ancestor of the Boston Belting Co., for this company later acquired the old Roxbury plant. But



DANIEL HODGMAN.

taking into consideration only continuous and uninterrupted existence, there appears to be no other rubber company that can compete with the Hodgman company's three-quarters of a century. If there is, now is the time to speak up; for until it does and proves its case the Hodgman company must be conceded the palm of priority, the record of its 75 years being unimpeachable.

It was founded by Daniel Hodgman. He was a typical Yankee boy, born in Mason, New Hampshire, in 1808, of good old, sterling native New England stock—the only kind of stock there was in New England in those days. A copybook, full of arith-

metical rules and problems which he composed as a part of his school work is still in existence. It is a most painstaking, accurate piece of work, with not a comma slurred or a dot slighted. Anybody looking at that copybook could tell that when the boy grew to be a man he would keep every engagement promptly and pay every bill when it was due—or a little before.

When he was 21 and had served his apprenticeship to a neighboring farmer, he struck out for Boston, the goal of all ambitious New England boys in those days. After remaining there a year he concluded that New York was even a larger field, and to New York he went. He found a position in the grinding room of a factory—probably the Atkinson rubber factory—and there he remained for eight years. It is no

joke to say that working eight years in a grinding room is a good deal of a grind, but it showed the quality of the man—he didn't object to hard work—and during those eight years he learned many things and saved up some money. But, what was more to the point, he kept his eyes open; and among the important things that he saw was the fact that there was a great future for india rubber. Those were the days of rubber's beginnings. A good many alert people had conceived the notion that if rubber could only be properly treated it could be made to serve a vast variety of useful purposes. Goodyear was cudgeling his brain over the problem. A greater vogue was given to the possibilities of this new substance by the spectacular ride of President Jackson through the streets of Boston on a rainy day clad cap-a-pie in a rubber suit which was provided him for that occasion. So, after eight years in the grinding room, young Hodgman—then 30—pulled out, and, taking a partner by the name of Robinson, opened a rubber store on Beaver street, New York. But Mr. Robinson does not seem to have been adapted to the rubber business, for he soon dropped out and Mr. Hodgman decided to go it alone and on a larger scale, and accordingly took a new and bigger store a little further uptown, on Maiden Lane. He made several changes of location as the increase of business necessitated it, but for 41 years he remained in the neighborhood of Broadway and Maiden Lane, 35 of these years, from 1844 to 1879, being passed in Maiden Lane.

He was not content to remain a storekeeper, however, but put his Yankee wits to work and started to invent useful articles of rubber. His first invention seems to have been a life preserver, for which he was given a medal and diploma at the Fair of the American Institute held in New York in October, 1840. In the meantime he had started a rubber factory at 26th street and East River, close to the factory where he had gained his experience. An exceedingly interesting document hangs on the



GEORGE F. HODGMAN.

wall of the Hodgman company's New York office, being an enlargement of the letter of patent granted Mr. Hodgman in 1842 for "a new and useful improvement on overshoes," the document being signed by no less a person than Daniel Webster, then Secretary of State. These Hodgman overshoes were evidently made of pretty good material, for the company has a pair now,



OLD STONE BUILDING CONSTITUTING HODGMAN FACTORY IN 1851.

made in 1848, that time has not withered nor made brittle—they are as pliable as if made last year.

An extremely interesting advertisement is still in existence, clipped from the *Evening Post* of 1846, in which Mr. Hodgman advertised a great variety of rubber wares, among them "Rubber Pantaloon," considerably affected in those days but not now worn, except as they form a part of the body boots used by oystermen. Speaking of interesting advertisements, here is a reproduction of an old picture of a "Forty-niner," dressed all in Hodgman rubber. When gold was discovered every able-bodied easterner wanted to start for California; and Mr. Hodgman saw to it that as many of them as possible started well equipped against the elements, in his rubber coats and boots and hats, with rubber knapsacks on their backs, advertising his store across the continent.

In 1851 a certain H. B. Ames assigned to Mr. Hodgman—for a consideration of \$2,000—a license which he had obtained from Charles Goodyear to manufacture rubber door springs. Mr. Hodgman seems to have put a great deal of energy into this particular branch. He built it up into a large business, as is shown by a little pocket account book still extant in which he recorded his monthly payments to Goodyear on his door spring sales; and seven years later, in 1858, a new indenture was made directly between Goodyear and Hodgman—an interesting document in Goodyear's own writing.

After a few years the factory on 26th street proved to be much too small, and in order to get more room for future developments Mr. Hodgman moved his manufacturing business in 1851 to Tuckahoe, a suburb north of New York City, where he bought a stone building, shown in one of the accompanying pictures, that had been used as a cotton mill.

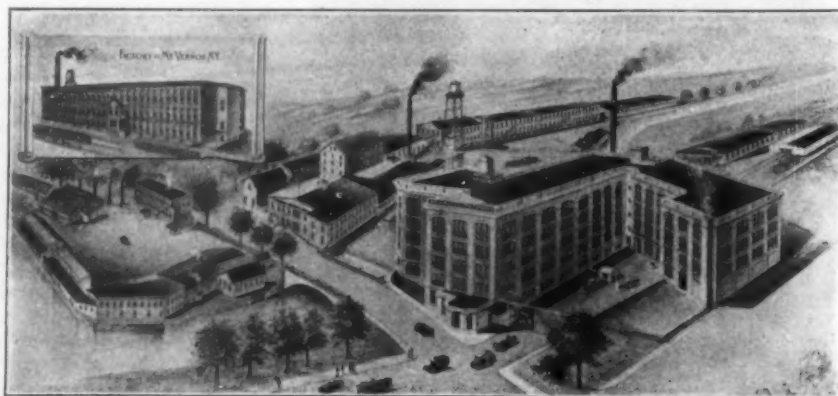
This was the beginning of the big Hodgman plant at Tuckahoe. This old stone structure still stands in good condition, though it was built just 100 years ago this year, and gives every evidence of being able to weather another century.

Daniel Hodgman died in 1874, but his two sons, George F. and Charles A., had been well trained, so that they were able to step immediately into the management of the large and successful business their father had left them. Eleven years later the company was incorporated, under the name of the Hodgman Rubber Co., George F. Hodgman becoming president and Charles A. secretary and a little later vice-president. In the mean time, in 1879, the store followed the up-town march and located at 425 Broadway; and in 1882, in addition to the large plant at Tuckahoe a new factory was built in the adjoining town of Mr. Vernon, which is devoted exclusively to the manufacture of mackintoshes and other rain coats.

George F. Hodgman had all the sterling qualities of his father. He had the same unswerving sense of honor and indefatigable industry; and in addition he possessed many social graces which the elder man, like most men of his generation, had not—because of the harder struggle of those early days—had time to develop. Under the presidency of George F. Hodgman the business of the company grew steadily from year to year. While he was a very broad man, active in church, civic and social interests—a member of the Union League, the Chamber of Commerce and other leading organizations—his chief concern was the big industry which he had inherited; and on his death, in 1906, it was passed on to other hands, much increased in size and importance.

For three years the company's president was Charles A. Hodgman, the second son of Daniel, who then retired because of ill health; and George B. Hodgman, son of George F., took the presidency, his brother, S. Theodore, being made secretary and treasurer—while a cousin, F. A. Hodgman, a son of the retiring president, was elected vice-president.

A few years before this, in 1903, the New York store had been moved to 806-808 Broadway, at 11th street, where it remains to this time, the most commodious rubber merchandising house in New York City. In the meantime the plant at Tuckahoe that began in 1851 with one small stone building has grown by one addition after another until it has assumed large proportions, many subsidiary departments being added, as, for instance, a box making shop, a machine shop, a printing department, an electrical department and an extremely modern laboratory, where a corps of chemists is constantly at work in experimental and



THE HODGMAN RUBBER CO. PLANT OF TODAY.

research investigation connected with rubber manufacture.

It can be safely said of the Hodgman company that, while it is probably the oldest rubber company in America, there is none that is more modern in its equipment or its methods. As in the early days of Daniel Hodgman, its products cover a wide variety

of goods, a few of which may be mentioned:—rubber clothing, mackintoshes, rain coats, air goods, articles for the bath and for

On Saturday, the 28th of June, the Hodgman company held a great celebration in commemoration of its seventy-fifth anniversary.



A. W. WARREN,
Secretary and General Manager.



GEORGE B. HODGMAN,
President.



S. THEODORE HODGMAN,
Treasurer.

the hospital; sporting goods, water bottles, syringes and other druggists' sundries; auto-top material, many kinds of tubing, and moulded goods.

The present chief executive of the company, Mr. George B. Hodgman, is maintaining the high traditions of his ancestors. How he is generally regarded in the trade may be shown from the fact that he is president of the Rubber Club of America, the first man outside of New England to receive that honor. And the big company over which he presides never displayed more vitality or more promise for uninterrupted progress than it does today.

The finances of the company are in the capable hands of Mr. S. T. Hodgman, who has been active in its affairs for twenty years. The secretary and general manager, Mr. A. W. Warren, has been with the company for nearly fifteen years and has done much to bring it to its present important and enviable position.

Incidentally, mention should certainly be made of Mr. Frank De Frate, great uncle of the president and of the treasurer, who has been connected with this company since 1846, 67 years ago. He is now, at the age of 89, daily at the factory. As the Hodgman company is undoubtedly the oldest rubber company in the country, it is equally safe to say that Mr. De Frate is the oldest man, both in years and in service, connected with any American rubber manufacturing plant.

sary and had a famous outing, where 1,500 of its employees and their friends were present. But that is a story all by itself.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of values of exports of manufactures of india-rubber and gutta percha for the month of March, 1913, and for the first nine months of five fiscal years, beginning July 1:

MONTHS.	Belting, Packing and Hose.	Boots and Shoes.	All Other Rubber.	TOTAL.
March, 1913.....	\$200,573	\$100,939	\$854,230	\$1,155,742
July-February.....	1,766,066	1,077,329	5,339,773	8,183,168
Total, 1912-13.....	\$1,966,639	\$1,178,268	\$6,194,003	\$9,338,910
Total, 1911-12.....	1,710,395	1,232,428	5,330,999	8,273,822
Total, 1910-11.....	1,511,975	1,801,977	4,485,644	7,799,596
Total, 1909-10.....	1,416,655	1,499,770	3,510,618	6,427,043
Total, 1908-09.....	1,053,758	1,071,489	2,805,914	4,931,161

The above heading, "All Other Rubber," for the month of March, 1913, and for the first nine months of three fiscal years, beginning July 1, includes the following details relating to tires:

MONTHS.	For Automobiles.	All Other.	TOTAL.
January, 1913.....	values \$273,519	\$50,409	\$323,928
February, 1913.....	276,253	44,130	320,383
March, 1913.....	482,821	34,935	517,756
July-December.....	1,777,324	316,352	2,093,676
Total, 1912-13.....	\$2,809,917	\$445,826	\$3,255,743
Total, 1911-12.....	1,869,471	393,920	2,263,391
Total, 1910-11.....	1,325,903	411,801	1,737,704

OLD ANDREW JACKSON AS A RUBBER ADV.

The United States Rubber Co. makes a brand of particularly tough rubber boots called the "Hickory" brand—a very proper name. To advertise this brand the company has recently issued a striking cut-out, a foot wide, standing about 20 inches high. It shows the figure, or at least the upper half thereof, of that sterling old American warrior, Andrew Jackson, known at his time and ever since as "Old Hickory." He is holding one of these "Hickory" boots in his hands while beneath a placard calls attention to the brand. This cut-out is printed in seven or eight colors and gives an excellent representation of the hero of New Orleans, as well as making an attractive advertisement.



A FORTY-NINER IN HIS RUBBER
OUTFIT.

OBITUARY RECORD.

GEORGE PELLINGER.

A BRIEF announcement was made in the June issue of THE INDIA RUBBER WORLD of the death of Mr. George Pellinger, president of the Vulcanized Rubber Co., which occurred at his home, Weehawken, New Jersey, on the night of Saturday, May 24.

Mr. Pellinger had been identified with the hard rubber industry since 1872, his start in the business being in a minor factory position with the India Rubber Comb Co. at College Point, New York. He remained with this company until 1878, when he resigned to accept a place in the Rubber Comb and Jewelry Co. of Bloomingdale, New Jersey. He left this company after sev-



GEORGE PELLINGER.

eral years of service, and helped organize the Keystone Hard Rubber Co. of Morrisville, Pennsylvania, with the assistance of Frank Nichols and Wm. A. Sheldon. He remained with this company until 1887, when, at the earnest request of Dr. B. F. Goodrich, he took charge of the Goodrich hard rubber department at Akron, Ohio, remaining there until 1895, when he accepted the position of manager of the electrical department of the Goodyear Vulcanite Co., since changed to the Vulcanized Rubber Co.

His well known ability and good business qualifications helped him to rise rapidly from this position to the presidency of the

company, which office he filled up to the time of his death. He is survived by his widow and four children.

HENRY KIVER.

Henry Kiver, head of the well-known crude rubber house of Henry Kiver & Co., operating at 5 Fen Court, Fenchurch street, London, E. C., died on the 2nd ult. Arrangement has been made for the continued operation of the business on the same basis and at the same address as hitherto.

PROSPECTIVE EFFECTS OF PROPOSED TARIFF REDUCTIONS ON RUBBER GOODS.

ANY reduction in tariff rates would naturally in the first place operate in favor of those foreign makers who have been doing business with this country in spite of the 35 per cent duty, and are thus in a better position to profit by the situation than those who have been kept out of the market by the tariff and would now have to make new connections. The next efforts to profit by the change would naturally be on the part of countries which have lost ground and wish to regain it.

The annual American imports of india rubber manufactures have been as follows: 1907, \$2,262,783; 1908, \$1,956,590; 1909, \$1,391,770; 1910, \$1,154,347; 1911, \$875,125; 1912, \$998,722.

The average reduction of 60 per cent, between 1907 and 1911 was distributed as follows among the three principal sources of supply:

	1907.	1911.
Great Britain	\$193,468	\$288,668
Germany	1,028,746	438,302
France	825,399	68,322
Total	\$2,047,613	\$795,292
Other countries	215,170	79,833
Total	\$2,262,783	\$875,125

For the six years Germany shows a falling off to the extent of about 47 per cent., while France only retained about 8 per cent. of its former trade. Great Britain, on the other hand, shows a gain of about 50 per cent.

Whether or not the result of the new tariff would be to encourage those countries which have lost ground to make efforts to regain it under the more favorable conditions now in prospect, the advance in imports from England would seem to indicate a still keener competition from that quarter in the future.

Canada has of late partially regained lost ground. In 1907 the imports from Canada nearly reached \$28,000. After a drop from \$27,970 in 1907 to \$1,894 in 1908, and \$1,899 in 1909, imports from Canada recovered to \$2,684 in 1910 and \$51,864 in 1911.

COMPARISON OF PAYNE TARIFF AND NEW SENATE TARIFF BILL.

PAYNE TARIFF.		PROPOSED NEW TARIFF AS REPORTED BY SENATE FINANCE COMMITTEE.	
Paragraph.	Per cent. ad valorem.	Paragraph.	Per cent. ad valorem.
463. Manufactures of India rubber.....	35	378. Manufactures of India rubber and gutta percha not specially provided for.....	10
464. " " gutta percha.....	35	378. Druggists' sundries	15
463. Rubber sponges	40	379. Hard rubber	15
135. Wires and cables composed of metal and rubber (equalling)	52	116. Wires and cables composed of metal and rubber..	15
330. Cotton and rubber belting.....	30	267. Belting of cotton or other vegetable fiber with India rubber	15
330. Tire fabrics	45	267. Tire fabrics.....	25
347. Waterproof cotton cloths (equalling).....	50½	259. Waterproof cotton cloths.....	25
330. Suspender webbing (cotton).....	45	267. Suspender webbing (cotton).....	25
358. " " (fiber).....	45	289. " " (fiber)	30
383. " " (wool) equalling.....	84	301. " " (wool)	35
401. " " (silk)	50	324. " " (silk)	45
332. Manufactures of cotton.....	45	271. Manufactures of cotton.....	30
402. Clothing of silk and India rubber.....	60	325. Clothing of silk and India rubber.....	50

New Rubber Goods in the Market.

LIVING IN THE OPEN.

"BACK to the open" has been the cry of city dwellers for a number of years. People are pretty generally waking up to the fact that if they had less medication and fewer serums and more fresh air and sunlight they would be much better off. Here is an open-air bungalow. It is made of canvas sides, with plenty of screened windows, and has a canvas



waterproof roof. In addition to the open windows it has open gables—which enables the occupant, while being duly housed, to live practically perpetually in the open air. The cut shows one of these bungalows with a floor space 10 x 14 feet, and with screened windows aggregating 81 square feet. Canvas curtains are provided for covering these screened windows when inclement weather necessitates. It is an admirable little house for camping purposes, for out of doors sleeping, as a summer house on the lawn, a playhouse for the children, or to supplement sleeping accommodations at the summer cottage or camp. It is light and portable, easy to put up and readily taken down. [The Camping Bungalow Co., Hartford, Connecticut.]

A NEW FIRESTONE CLINCHER TIRE FOR ELECTRICS.

Extremely sensitive mechanisms—these electric cars. They cannot be bounced around with impunity—every jolt and jar by that much diminishes the mileage power of the batteries. For that reason pneumatic tires have been used extensively on the electric delivery wagons employed by city stores, to relieve, as far as practicable, not only the mechanism of the car itself, but the batteries from jarring.



But a pneumatic tire on a delivery wagon has its drawbacks, because it may be necessary to arrive at a given point at a certain time, and a puncture or a blow-out may interfere seriously

with such a programme. Consequently various manufacturers have devoted much time to the designing of a cushion tire that shall be sufficiently resilient to be used on electric delivery wagons without subjecting the batteries to excessive jolting. The Firestone people have recently put on the market a new tire which they call the "Firestone Clincher Cushion Tire for Electric Cars." The accompanying cut gives a very good

idea of it. The manufacturers say that this tire has all the cushion value of the pneumatics hitherto used. It is interchangeable with pneumatics on standard clincher or quick detachable clincher rims. [The Firestone Tire & Rubber Co., Akron, Ohio.]

A BELT TO KEEP SHIRTWAISTS IN PLACE.

Slovenliness is the greatest crime of which a woman can be guilty. Other delinquencies are readily forgiven her, but to go around with everything flying at loose ends is unpardonable—that is a mortal sin. Here is a device to assist women in their effort always to appear trim and orderly. It is a shirt waist belt, consisting of a specially woven corrugated elastic cord with small nickel fastener. It is worn as a belt



THE "TREC" SHIRTWAIST BELT.

around the shirtwaist, beneath the skirt, and keeps the waist in place. Its length can be regulated without in any way decreasing its snug fit and tenacious hold. It cannot tear the waist and it is quite inexpensive. [M. W. Schloss, 291 Seventh avenue, New York.]

A RUBBER STAMP FOR EGGS.

In these days when there are so many different qualities for almost every sort of article, the consumer likes to know where his particular purchase comes from, as the brand indicates to him the quality. He always looks for the name when he purchases a tire or a pair of shoes. In fact this principle has been carried even into the world of edibles, so that many



THE "PAT" EGG MARKING STAMP.

people always buy oranges from a particular grove and eggs from a particular poultry farm. Here is a simple rubber stamp for marking eggs. It consists of a little metal tube, one end being open and the other end furnished with a molded rubber diaphragm. In inking the pad the finger is inserted in the cylinder so as to push the diaphragm against the inking pad, but in stamping the egg the finger is removed so that the rubber diaphragm conforms to the shape of the egg. It is a simple and inexpensive device. [The R. H. Smith Mfg. Co., Springfield, Massachusetts.]

VOLUME OF RUBBER TRADE.

It has been estimated that out of a rubber production of 108,000 tons anticipated for 1913, nearly 45,000 tons will be consumed in factories identified with the automobile industry. That industry is said to now consume as much rubber as constituted the total supply of the world fifteen years ago.

NEW TRADE PUBLICATIONS.

THE LATEST GOODRICH LITERATURE.

THE B. F. Goodrich Co., Akron, Ohio, is a firm believer in advertising literature. The output from its printing presses is not only of an attractive and artistic character, but it is more or less continuous. During the past month it distributed to the trade a number of interesting pamphlets, among which the following are included:

"The Automobile Tire, Its Care and Repair," which is a catalog in convenient pocket size, of automobile accessories, and contains suggestions as to the proper way of using them. It describes and illustrates the "Goodrich Rubber Cement," the "Goodrich Plastic," the "Self-Vulcanizing Patch," the "Permanent-Puncture Plug," the Goodrich emergency band, the inside protector, and various other articles.

Another pamphlet describes the Goodrich elevator belts, including the special white-covered canning belt. Another little leaflet describes and illustrates the "Crest" fountain syringe. There is also another Goodrich route pamphlet, this time showing how to go from Philadelphia to Baltimore and Washington, and giving small but clear maps of these three cities.

AN EXCEEDINGLY ATTRACTIVE PURITAN.

THERE has been some criticism, these latter days, regarding the Puritan, some contending that while he was a very worthy person, he was too stern and austere to be altogether attractive. But regarding the Puritan maiden there never has been any ground for argument. She is altogether attractive. The E. H. Clapp Rubber Co., which makes certain "Puritan" brands of reclaimed rubber and uses the word "Puritan" as a trade mark, has favored its friends with a handsome colored panel, about 10 inches wide and 16 inches high, showing a "Puritan Girl" standing on the rock-bound coast, looking off at the "Mayflower"—or a craft of a similar type, anchored in the distance. As befits the type, she is a trim figure, plainly attired and extremely proper, but withal, very winsome in her youthfulness and unworldliness. The panel is in a narrow gilt frame and is pretty enough to hang anywhere.

A CONSPICUOUS TENNIS HANGER.

THE United States Rubber Co. has always issued attractive advertising in connection with its "Tennis" brand. Incidentally, its Tennis brand is one of its most popular lines. Possibly the popularity of the goods is attributable to the excellence of the advertising; or possibly the excellence of the advertising simply proves an effort on the part of the printing department of the company to keep pace with the work done by the factory. The latest Tennis product of the company's advertising department is a circular cut-out card, about 12 inches in diameter, printed in red and black, showing around the margin, in letters that appear to be deeply embossed, the words "Champion Tennis Shoes," while running across the card is a cut-out Tennis shoe, of the black variety. It is a conspicuous sign for wall or window.

A FOLDER FOR A RUBBER BOOT.

THE United States Rubber Co. is also distributing a small folder calling attention to its "Hickory" brand of rubber boots. It is printed in buff, green and black, and the front half of the folder shows a half-tone of the boot. On the inner pages will be found some excellent advice regarding the treatment and preservation of rubber footwear. A small wash-sketch shows a farmer coming from the barn, balancing two heavy pails of milk, and wearing a pair of these boots. Incidentally, there is a driving rain, and the pails are not covered, so that the honest farmer will have more milk when he reaches the house than when he left the barn—but he can't help that.

CANADIAN CONSOLIDATED RUBBER COMPANY, LIMITED.

In an attractive group of five catalogues, the Canadian Consolidated Rubber Company, Limited, tells the story of its products, under the divisions of Mechanical Rubber Goods, (A); Druggists' Sundries, (B); Molded, Miscellaneous and Plumbers' Rubber Goods, (C); Fire Hose and Supplies, (D), and Textile Goods, (F). The five catalogues have in the aggregate about 400 pages, in most of which are illustrations of the company's products. Each catalogue having a separate index, reference is thereby facilitated.

Rubber belting, for various reasons, claims superiority to that of other materials, retaining uniform width, thickness and tensile strength in spite of dampness and changes in temperature. These advantages are explained in catalogue A, which further gives prominence to the fact that the company's belting is thoroughly stretched in manufacture, the amount of stretch caused by work being thus minimized. Rubber hose likewise comes under this section, in which are illustrated the varied products of the company for conducting water, air, steam, oil, beer, wine, tannery fluids and acids. The eleven grades of garden hose are effectively illustrated in color printing. With regard to packing, the need of efficiency is duly urged, and emphasized by illustrations of the various grades made by the company.

In Catalogue B, the subject of Druggists' Sundries is fully dealt with, every feature being illustrated. Catalogue C takes up Molded Goods and Plumbers' Rubber Goods, including matting, stair-treads and tiling. Catalogue D is specially devoted to Fire Hose and Supplies.

Catalogue F directs attention to the company's complete line of rubber textile goods, including aprons, carriage cloth, auto top cloth, rubber coats, auto accessories, sportsmen's rainproof materials, horse covers, etc.

Each catalogue is complete in itself, containing views of the company's premises at St. John, Halifax, Montreal, Ottawa, Quebec, Toronto, London (Ont.), Hamilton, Brantford, Winnipeg, Regina, Calgary, Saskatoon, Edmonton, Vancouver and Victoria.

A NEW CATALOG FOR DAVID BRIDGE & CO.

David Bridge & Co., of Castleton, Manchester, England, have been issuing catalogs these 20 years, and as a rule the catalogs have constantly been getting larger, better and more complete. The latest catalog issued by this company—which it calls C 12—covers the friction clutches and driving installation under the Heywood & Bridge patents made by this company. It is a catalog of 190 pages, though, being only 5 inches in width, it can conveniently be inserted in a desk pigeon-hole, or in a coat pocket if desirable. The striking feature of this catalog is its wealth of illustrations. By actual count, there are 305 cuts in the book, some of them pen and ink drawings of machinery, but a great many of them half-tones made direct from photographs. The first cut in the book is an interesting birdseye view of the company's works, giving a very good idea of their magnitude.

In addition to a vast deal of information about the clutches and driving installations of every kind which the company makes, there are at the back of the book a good many tables which will be found of value to factory superintendents and others interested in any way in machinery—for instance, a table giving the belt velocity or circumferential speed of pulleys; a table of horse powers that a good cotton rope of different diameters will transmit at various speeds; a table showing the equivalent of millimeters in inches, and a conversion table which gives the equivalent of the metric system of weights and measures in the system generally in use in England and in the United States.

Replete with information for rubber manufacturers—Mr. Pearson's "Crude Rubber and Compounding Ingredients."

The Editor's Book Table.

ANNUAL REPORT OF THE DIRECTOR OF FORESTRY OF THE Philippine Islands. Manila, 1912. [Paper, 60 pp.]

THE annual report of the Director of Forestry of the Philippine Island, for the fiscal year ending June 30, 1912, has come to hand. In the absence of the director, Major Ahearn, it has been submitted by the acting director, Mr. W. F. Sherfesse, and bears evidence of careful compilation.

It is stated that a marked decrease took place during the year 1912 in the exploitation of gutta-percha, owing to the extremely low market price during that period. Timber naturally occupies a prominent place in the report, which is embellished by some effective illustrations of Philippine forest scenes.

ACROSS THE ANDES; A TALE OF WANDERING DAYS AMONG the Mountains of Bolivia and the Jungles of the Upper Amazon. By Charles Johnson Post. New York, 1913. Outing Publishing Company. [Cloth, 362 pp., with 54 illustrations.]

In this bright description of one of the less known highways of travel, Mr. Post has accomplished the main object of the returned voyager. He has, by means of his vivid descriptions of ocean, mountain, jungle and river, carried the reader with him from Panama to Manáos. He reached Callao by steamer, and thence proceeded by a short railway journey of a quarter of an hour to Lima, described as a "Delightful City of Contrasts," in which highly civilized pleasures are found alongside of aimless poverty. Resuming his steamer voyage at Callao, Mr. Post reached Quilca, where he struck the trail leading to San José, continuing his journey by train to Arequipa and Lake Titicaca, finally arriving at Gnaqui, where there is a connection with the railway for La Paz.

From the capital of Bolivia, his journey was continued by pack train and saddle, raft and canoe. The third and last of the Andean series was to be crossed, being also the highest and most difficult of the range.

Mr. Post's narrative of how he reached the confluence of the Madeira and the Amazon, thence breasting the current to Manáos, is graphic and picturesque, dealing with every notable incident which marked his journey, lasting over three and a half months from La Paz to its termination.

Rubber forms the subject of frequent reference, particularly the discomforts and disadvantages to which the rubber-pickers are subjected. The facts quoted illustrate and confirm the various statements which have been officially made as to the absolute dependence of rubber pickers upon the estate owners for even the barest necessities of life.

PROTECTION OF INTELLECTUAL PROPERTY. DR. L. H. BAEKELAND. 1913. [Paper, 16 pages.]

Readers of THE INDIA RUBBER WORLD will recall the excerpts published in the April, 1912, issue (page 361) from Dr. Baekeland's paper on the above subject, read at the Detroit meeting of the American Institute of Chemical Engineers. The recent issue of the paper in pamphlet form affords an opportunity of reading Dr. Baekeland's work in its entirety.

The excerpts in question included those portions dealing with "Intellectual Property Rights," "Fundamental American Patent Law," "Incompleteness of New Rules of Supreme Court," "German Practice of Settling Patent Suits," "Deficiencies of Proposed Oldfield Bill," and other points of importance.

In the more complete form as now issued, the paper refers to the fact that the average man has a one-sided conception of patents or inventions, and of the trouble and expense incidental to the protection of even apparently simple devices. The far-reaching effects of chemical inventions is a point which even the better prepared legislators find it difficult to understand; though such inventions have brought about the most far-reaching development. An instance is afforded by the perfecting of

the automobile and all that it implies, from Goodyear's process of vulcanizing rubber. Another example is the diffusion of knowledge rendered possible by printing on cellulose paper.

With reference to the cost of living, Dr. Baekeland points out that the industries where invention and patents play the smallest rôle are also those where the increase of prices is most burdensome; while those commodities where patented inventions have had the fullest influence have, on the contrary, decreased in price, sometimes to an astonishing degree. The latter inventions include those of a chemical nature, where cheap soda means cheap soap, paper and glass, while cheap sulphuric acid leads to cheap fertilizers and cheap bread-stuffs. The present price of clothing is high, but would be still higher only for the patented machinery used in textile manufacture.

An interesting section of the pamphlet deals with the organization of the large German chemical companies, which employ hundreds of chemists and engineers exclusively upon research work. Other sections of interest treat of "The Gap Between Invention and Commercial Success," and "The Educational Effect of Inventions."

In the final section, "What should be done," Dr. Baekeland points out two ways open to our legislators; one of them "hitting the trusts" by mutilating the best there is in our patent system, while the other is not to put dangerous restrictions on the patent rights defined by the constitution. There is, however, he adds, an urgent need of reform by simplifying procedure at the Patent Office, as well as in the courts.

Dr. Baekeland, moreover, remarks that the history of almost every invention is an epic in itself, the details of which are known only by the few pioneers, who gave their brains, money, talent and even lives, to its development.

UEBER KAUSCHUK UND GUTTA PERCHA HARZE (RUBBER and Gutta Percha Resins). By Dr. Gustav Hillen. Berne, 1912. M. Drechsel. [Paper, 96 pages.]

Of the various branches of rubber science, none has been more largely the subject of technical disquisition than that of the resinous components of the substance. In Dr. Hillen's work are condensed extracts of what the principal authorities on the subject have written, his references embracing the works of Terry, Weber, Henriques, Harries, Tschirch and others.

In his treatment of the matter Dr. Hillen has dealt with it in two sections—Rubber Resins and Gutta Percha Resins—regarding both of which branches he has supplemented his references to other authors by original chemical and scientific observations. His general conclusion shows, that, of the two, gutta percha resins are more uniform in their nature, while rubber resins, which have been in the past less the subject of investigation, show quite a different composition, largely consisting of greasy masses, difficult of separation, from which in many cases only substances hard to crystallize are to be obtained. Dr. Hillen adds that the resins of the so-called "pseudo-rubbers" such as Pontianak, Almeida and others, form an intermediate group between gutta percha and rubber resins.

A number of tables illustrate the analytical results obtained by Dr. Hillen in the course of his researches.

His work, though only of 96 pages, has the advantage of concentrating much that has been written on the matter, thus forming a key to the results obtained by previous scientists. He prepared this dissertation in connection with his examination for the Doctor's degree at the University of Berne, where he had the benefit of the guidance of Professor Tschirch, a specialist on the subject. Dr. Hillen's work will be appreciated by rubber chemists generally, as a distinct addition to existing literature concerning rubber resins.

The India Rubber Trade in Great Britain.

By Our Regular Correspondent.

AN important action in reference to the use of proofing formulae came on for trial at the Manchester Chancery Court on May 29, and lasted for three and a half days. The plaintiff was F. A. Shiers, trading as Ferguson, Shiers & Co. at Failsworth, Manchester; the defend-

ACTION BETWEEN PROOFING FIRMS.

ants being A. O. Ferguson and L. C. Fuller, both directors of a new proofing company at Hollinwood, Manchester. Mr. A. O. Ferguson is a son of the late Mr. Ferguson, who was senior partner of the plaintiff's firm. After his father's death two years ago Mr. A. O. Ferguson became manager of Ferguson, Shiers & Co., and a few months ago, after a disagreement with Mr. Shiers, left the firm, with Mr. Fuller, his assistant, to start a rival business. The present action was brought to restrain the defendants, by injunction, from using the formulae for the "mixings" in their new business, or any colorable imitation thereof; and also to restrain them from circularizing the trade to the effect that they were in a position to supply similar goods to those so long supplied by Ferguson, Shiers & Co. The case was complicated by the fact that the defendant, Ferguson, had been apprenticed to the older firm to learn the business and all the secrets thereof, with the idea of succeeding his father; thus being in a different position from that of an ordinary employee. The main point of the defence, however, was that the "mixings" of the late Manager Robinson having become obsolete, these had been replaced in recent years by new ones of A. O. Ferguson's own, and that therefore they were his property. The plaintiff and his witness contested the novelty of the new formulae, saying they hardly differed from Robinson's formulae, despite the inclusion of crêpe rubber and guayule, which, of course, testify to comparative modernity. Since the proceedings were started, the defendants for the first time had supplied the plaintiff with a copy of their formulae books, Ferguson's containing 99 recipes and Fuller's 163; and after the commencement of the trial, Fuller gave back his book. The issue was then reduced to whether Ferguson was to be allowed by the court to use his M. S. copy of the Ferguson-Shiers' "mixing" book. Chemical evidence as to the composition of the "mixings" was given by Mr. Hutchinson, F. I. C., for the plaintiff, and by H. L. Terry, F. I. C., for the defendants. The latter said that he had read through the book of formulae and had not noticed anything that could be called a secret process. All the constituents given in the formulae were well known in the trade, and were sold to the trade generally and not to individuals alone. The difference was in the proportions of the constituents and this was largely controlled by price and fashion. He could not say that "mixings" identical with those were common to the trade, with the exception of a certain government "mixing." Proofing managers who were worth anything knew well the general lines on which mixings at different prices were made, and though the same constituents might probably be used by different men, he would expect the quantities to vary, as every proofer was a law unto himself. Asked as to the probable effect of an injunction on the defendant, the witness said that he could no doubt carry on business without using their actual formulae, but it would be impossible to go on without using what would no doubt be held to be a colorable imitation. Further evidence for the defence was given by Mr. E. L. Curbishley, who supported Mr. Terry's statements and spoke to the common practice among proofers of having note books

as aids to memory. After evidence had been given at length by the two defendants, discussion took place between counsel and judge, the result being that the colorable imitation clause was abandoned in the claim for injunction. Addressing the court for the defence at considerable length, counsel submitted that all a workman undertook to do when he entered his employment was to use his information and skill to the best of his ability on behalf of his employers. There was nothing restricting him, on originating anything, from making a record of it and from making sure of it for his own benefit after leaving that employment. Counsel then cited decisions to show that so far no court had granted injunctions respecting knowledge, unless it had been acquired surreptitiously, or respecting documents, unless they had been copied in breach of confidence. After counsel for the plaintiff had spoken, the vice-chancellor said he would reserve judgment.

On June 16 the vice-chancellor in his judgment said that an order must go against each of the defendants, restraining them **JUDGMENT IN PROOFING** by injunction from making use of any **ACTION OF SHIERS V.** private or secret recipes used by the **FERGUSON & FULLER.** plaintiff or his firm, and obtained by the defendants while in the employ of the firm; and from communicating or disclosing to any person, company or firm, any of such secret recipes or any information relating to them, or making use of any confidential information relating to the plaintiff's business, obtained by the defendants while in the plaintiff's employ. The defendants were also ordered to deliver up books or memoranda containing recipes or information. The case, he thought, fell under the general rule that an employee, to whom confidential communications are entrusted to enable him to carry out the business of his employer, might not utilize that information for his own purpose after the employment was determined.

The extremely cool weather of the summer of 1912 gave a great impetus to new developments in the oilskin trade, and this year the business shows a large increase, though the weather has not been so persistently bad. The developments I refer to are the production of light articles, overalls and coats of oilskin to be worn by the man and woman in the street, the business in the past having been mostly confined to mariners, whose requirements were for something useful rather than ornamental. The oilskin business in Great Britain has not been carried on as a branch of a rubber manufacturer's business, except at the old established works of Messrs. Abbott, Anderson and Abbott at Dod street, Limehouse, London. This firm has long carried on the manufacture jointly with that of ordinary rubber waterproofs, and it is not surprising that they are in the van of the new business. I don't know whether the new goods are being made in America, but at any rate the subject is of some interest, as the oilskin comes into direct competition with the macintosh. In order to get some information on the subject I obtained an interview with Mr. William Abbott, who informed me that his firm had largely extended their oilskin business; new works having been acquired at Harpenden, some miles from London. The Dod street works are now devoted entirely to the making up of rubber-proofed cloth into garments. Mr. Abbott reports the new oilskin trade as exceedingly brisk; they being booked up with orders for months to come. Though the goods are made in different qualities to retail at from 4s. 6d. to 30s. (\$1.08 to \$7.20) each, the principal demand is for the 30s. oil-silk, known as

OILSKIN WATERPROOFS.

Abbott's "Auto-Soie." These are made in eight colors, and are very light and transparent. What their lasting power is, compared with a macintosh of the same price, I do not know. But I gather that their life is by no means co-extensive; more particularly because they require careful handling. The main point about the business is that they have become popular with ladies who are not too particular as to the price, as long as the thing is fashionable. One of the advantages of the oil-skin over the macintosh, I am told, is that it permits an expensive dress underneath it to be seen by others, and that largely accounts for their appearance this year at fashionable out-of-door gatherings in dubious weather. Although Abbotts may be considered the pioneers in this business, they are by no means without competitors, and in all probability, unless the demand should prove evanescent, we shall see further competition arise.

A somewhat sensational paragraph has been going round the English papers with reference to a case in America where

DANGEROUS GOLF BALLS.

a boy lost the sight of an eye by opening a liquid core golf ball. As there is no reason to doubt the authenticity of the case, it would certainly seem advisable that balls containing corrosives such as caustic soda and chloride of zinc should be sold with some notification of their hidden danger. One of the results of the paragraph has been the bombarding of British dealers in golf balls as to the dangers that may lurk therein; the general answer being that such balls are not sold here.

Compared with what was the case two or three years ago, one hears singularly little about re-formed rubber nowadays.

RE-FORMED RUBBER.

With regard to the Premier Re-forming Co., of Walthamstow, a new board of directors has been elected, and at a recent meeting it is understood that the financial position was under special consideration. Mr. Rawson, who was the promoter of the company, and who was to act as consulting engineer for a term of years at comfortable remuneration, has now severed his connection with the concern.

I have read the editorial headed "The Best Rubber School" in the June issue of THE INDIA RUBBER WORLD with interest,

TEACHING RUBBER MANUFACTURE.

and have little doubt that it will be endorsed by our manufacturers generally. Here, as in America, the best rubber schools are still to be found within the four walls of the factory. Your reference to one of the Polytechnic institutes in London is not quite accurate; the Polytechnic in Regent street being the only institution bearing that title, and ranking among the numerous technical colleges now to be found scattered over the metropolis. Already the initiative of the Polytechnic in founding a rubber department has been copied in provincial technical schools and doubtless the movement will spread under the aegis of education enthusiasts, and the glut of those who wish to turn their knowledge to account as leaders. Some manufactures can no doubt be successfully taught at colleges, but I don't think that rubber can be included in their number, for reasons which it would occupy too much space to elaborate. Mention may, however, be made of the varying procedures in important matters of detail, which occur in the several works and which, if they do not in truth merit the term of secret processes, come near the category of such, and at any rate are kept as quiet as possible by those working them. It seems to me that the teacher of the rubber manufacture who goes beyond general principles will make himself unpopular with, at any rate, some of the manufacturers, and others will be in a constant state of suspense as to whether their particular methods will come out in the lime-light of the classroom. Leaving this point, however, for another, it is certain that the supply of chemists wishing for posts in rubber works will shortly (if such is not already the case) largely exceed the demand.

Compared with what was the case twenty years ago, the use of lime in compounding rubber shows a decided increase.

THE USE OF LIME IN RUBBER.

Not only is it more generally used in rubber goods, but, what is more noticeable, the very small proportions of the past are now being exceeded. The main reason for this lies in the fact that whereas in the past rubber used to be kept for weeks—in some cases months—after washing, before being used, a more hand-to-mouth policy now prevails and the rubber is used up at once. Without necessarily being damp, it is apt to be so. Hence the increased use of lime as a preventative of prospective trouble.

THE RUBBER TRADE ASSOCIATION OF LONDON.

WITH the growing importance of London as a rubber market, the necessity had become evident of an organization in which the various sections of the trade would be appropriately represented and which would at the same time serve as an authority on the various questions arising in the conduct of the increasing business of the port.

The foundation in April last of "The Rubber Trade Association of London" has met these requirements. Its establishment under the auspices and with the co-operation of the "Rubber Growers' Association" ensures a continuity of previous efforts. The last named body has four representatives on the committee, which likewise includes six brokers and six dealers.

As defined in the general regulations, the objects of the association are: To promote the best interests of the Rubber Trade as a whole, for the mutual benefit of all concerned, producers, importers, brokers, dealers and consumers in general; to facilitate the settlement of disputes in the trade by arbitration; and for these purposes to make rules for the proper supervision and efficient conduct of the trade, including the regulation of mutual transactions between members of the association.

The entrance fee is £5 5s. (\$26.25), the annual subscription being of like amount.

A prominent feature of the association is the "Standard Qualities Committee," whose duty it will be to examine all samples of plantation rubber sold under any of the standard descriptions, for the purpose of certifying before tendering whether such samples conform to the recognized market standards.

The officers and committee for 1913 are: Chairman, Samuel Figgis; vice-chairman, Harry Symington, and treasurer, J. D. Johnston.

The committee consists of the following brokers: A. Bussweiler, Andrew Devitt, Samuel Figgis, Patrick Gow, W. J. C. Hendrey, and Geoffrey Hoare; of the following dealers: E. Berg, J. D. Johnston, Arthur Meyer, E. Stevenson, L. Sutro, and Harry Symington; and of the following representatives of the Rubber Growers' Association: A. Gordon Dickson, E. L. Hamilton, Arthur Lampard, and John McEwan.

The Standard Qualities Committee for 1913 consists of Spencer Brett, Andrew Devitt, W. J. C. Hendrey, L. Jacob, Arthur Jones, F. Loefflund, A. H. Punnett, Roger E. Thompson, and W. S. Worthington.

The secretary is William G. Briggs, and the offices are at 6 Mincing Lane, E. C.

NEW LONDON RULES FOR PLANTATION RUBBER BUSINESS.

One of the first acts of the association has been the promulgation of a set of 30 rules, applicable under arrangement to private contracts, but to which all sales of rubber at public auction are considered as subject. These rules are to govern all contracts made on or before May 1, 1913, but rule 4, abolishing the allowances for draft and discount (referred to later on), will only apply to contracts made on and after January 1, 1914.

In rules 2 and 3 the usual formalities of auction sales are

provided for. Rule 4 fixes the "prompt" (or date of settlement) as the Saturday fortnight from date of sale or tender; sales or tenders dated on Saturday to be "prompt" that day fortnight. Draft $\frac{1}{2}$ per cent., discount $2\frac{1}{2}$ per cent., but on contracts made on and after January 1, 1914, no allowance for draft or discount will be made.

TENDERS.

Under rule 5 tenders are to be made on official forms, which are circulated through the hands of the parties interested. For a tender to be good, the first seller must be in a position to deliver on day of tender. By rule 6 buyers have the option of rejecting any tender of less than 2,000 pounds, except in completion of a contract.

Rule 8 provides that rubber sold under standard descriptions, before being tendered, must be certified by the Standard Qualities Committee of the association.

WEIGHTS.

According to rule 12, rubber is to be taken at reweights. Rule 13 provides for the final deliveries on contracts to be within 100 pounds of the weight contracted for, but in any case the nearest admitted by the average weight of the cases of the final tender

ARBITRATION.

The following rules apply:

DEFAULT. RULE 14.—Whenever it may be admitted by the seller or decided by arbitration that the seller has failed to fulfill the terms of the contract, the buyer shall "close" by invoicing back the rubber to the seller at once, at a price and weight to be fixed by arbitration, which price shall not be less than 2 per cent., and not more than 10 per cent. over the estimated market value of the shipment contracted for on the day upon which the default occurs, the difference to be due in cash in seven days.

SHIPMENT CONTRACTS. RULE 16.—When a parcel of rubber is sold under one of the standard descriptions for a specified shipment or for shipment by a specified steamer, and found inferior, or if any portion tendered be found inferior, buyers shall have the option of rejection; and the quantity so rejected, whether the whole or any portion, shall not constitute a delivery on the contract, but should the time for delivery have expired the seller shall be allowed three clear working days to replace the quantity rejected (provided that such quantity was in the opinion of the arbitrators a *bona fide* tender), otherwise Clause 14 of these rules to apply.

IF RUBBER IS INFERIOR TO GUARANTEE BY OVER 2d. PER POUND. RULE 17.—When a parcel of rubber is sold with a guarantee of quality other than as specified in Rule 15 for a specified shipment or delivery or for shipment by a specified steamer, and found inferior, or if any portion tendered be found inferior, the buyer must accept the same with an allowance, provided such allowance in the opinion of the arbitrators be not more than 2d. (two pence) per pound or otherwise as may be specified in the contract; but should the parcel or any portion tendered be rejected, the seller to have the option (provided that it was in the opinion of the arbitrators a *bona fide* tender) of substituting guaranteed quality on the spot, to fulfill his contract within three clear working days or the expiration of time for delivery as the case may be; otherwise Clause 14 of these rules to apply.

APPLICATION.

APPLICATION.—The final clause provides that these rules shall govern all contracts made on or after May 1, 1913.

RUBBER MANUFACTURING MACHINERY.

Under No. 10915, the Bureau of Foreign and Domestic Commerce reports that a European engineer, at present engaged as consulting and visiting engineer for tea and rubber estates, informs an American consulate that he is confident American manufacturers of rubber-making machinery could find a large market locally if they were willing to undertake the manufacture of machinery slightly different from that now in use on rubber estates. He states that he is willing to submit plans and specifications for machinery such as he believes would find a considerable market among estates, to any American manufacturers who will communicate with him.

RECOVERY OF RUBBER SOLVENTS.

In the application of rubber to fabrics on the spreading machine, the benzene is lost through being converted into gas by evaporation, unless there is a suitable apparatus for the recovery of the solvent. According to the "Gummi-Zeitung," such an apparatus might be constructed as follows: A longitudinal wood frame with a suction appliance is built in the spreading machine, while on the wood frame a funnel-shaped appliance of thin galvanized iron is constructed, in the center of which is a pipe for the suction of the benzene vapors. It leads to the cooling apparatus, which is situated outside the building. The suction pipe lies somewhat higher than the waste pipe, both being connected by a T-shaped piece. The pipes are cooled by cold water, the benzene vapors being thereby again converted into benzene and caught up in a glass carboy or other suitable receptacle.

A RUBBER INSTITUTE!

Writing to the "Financial Times" of London, under the name of "Robusta," a correspondent suggests that the Eastern plantations should establish in London an institute for dealing with anything and everything which may promote their welfare.

Its activities might be under two headings: (1) commercial, (2) educational. Under the first heading it might be made the chief Rubber Exchange of the world, where the dealers might have their offices and meet their clients at daily markets. It could also be made a rubber technical institute, dealing with all problems in connection with the manufacture of the raw material and the discovery of new uses for rubber. Under the second heading it might become a training school, where young men proposing to become planters might receive the necessary scientific training for reaching the highest standard of efficiency.

It should have at its disposal funds for the encouragement of research, by offering substantial prizes for essays, observations, experiments, or technical improvements which might add to the prosperity of the industry.

A PROSPEROUS GERMAN COMPANY.

The Rhenish Rubber and Celluloid Co. reports for 1912 a surplus equalling \$658,903, as compared with \$617,263 for 1911. A dividend of 30 per cent. has again been paid.

UNITED BERLIN-FRANKFURT RUBBER FACTORIES.

At the recent general meeting of the above company a dividend of 9 per cent was declared for 1912. Prospects for the current year were said to be affected by the political situation, which had restricted purchasing operations.

HYGIENIC EXPOSITION AT LIMA.

An international hygienic exposition will be held at Lima, Peru, from September 2 until December 31, 1913. All exhibits will be admitted free of duty.

INCREASING FRENCH TRADE IN AMERICAN RUBBER SHOES.

United States Consul Carl Bailey Hurst, of Lyons, France, reports that trade in American footwear is increasing in his district, American rubbers, storm slippers and sandals being more widely used.

RUBBER TRADE BETWEEN LONDON AND UNITED STATES.

According to the recent report of Consul General John L. Griffiths, of London, the imports from the United States at that point for 1912 included 441 tons of rubber, valued at the equivalent of \$135,488.

The crude rubber exports to the United States represented for 1911, \$13,733,753; and for 1912, \$28,676,300; while the exports of rubber clothing and manufactures represented for the two years respectively \$483,178 and \$487,379.

MR. YORKE'S OFFICE IN PARIS.

Mr. H. William Yorke announces to the trade that he has opened offices at 26 Rue de Turin in Paris, for the purpose of dealing in Colonial produce in general, but particularly in crude rubber. He has had twenty years' experience in the gathering, cultivation and manufacture of rubber.

GERMAN EXPORTS OF CRUDE AND WASTE RUBBER.

GERMAN statistics of rubber exports for 1911 and 1912 show the following results: Crude and washed rubber in 1911 represented 4,592 tons; in 1912, 4,943 tons. The amounts were made up as follows:

GERMAN EXPORTS OF CRUDE AND WASHED RUBBER.		
To—	1911. tons.	1912. tons.
United States	2,394	2,671
Russia	428	660
Austria-Hungary	648	532
Great Britain	336	392
France	204	188
Belgium	206	164
Sweden	107	99
Italy	64	88
Denmark	42	38
Switzerland	43	25
Netherlands	62	20
Other countries	58	66
Total	4,592	4,943

GUTTA PERCHA.

Total exports were in 1911, 184 tons; and in 1912, 291 tons.

BALATA.

In 1911 Germany exported 220 tons; in 1912, 222 tons. Among the items of export were:

GERMAN EXPORTS OF BALATA.		
To—	1911. tons.	1912. tons.
Norway	28	45
Great Britain	77	41
British Malaya	—	35
Other countries	115	101
Total	220	222

RUBBER SUBSTITUTES.

Germany exported in 1911, 198 tons; in 1912, 219 tons.

WASTE RUBBER, GUTTA PERCHA AND BALATA.

These represented in 1911 a total of 2,314 tons, and in 1912, 6,034 tons. The separate quantities taken by the chief outlets were:

GERMAN EXPORTS OF WASTE RUBBER, GUTTA PERCHA AND BALATA.		
To—	1911. tons.	1912. tons.
Great Britain	968	2,840
United States	518	1,917
Netherlands	176	379
France	127	249
Austria-Hungary	180	222
Other countries	345	427
Total waste	2,314	6,034

GERMAN RUBBER INDUSTRY OF 1912.

The report of Consul General A. M. Thackara, of Berlin, on industrial conditions in Germany, states that the year 1912 witnessed a brisk trade in rubber goods, prices being, however, depressed. This was specially the case with the manufacture of tires, in which there was marked competition.

DRUGGISTS' EXPOSITION IN GERMANY.

The first South German Druggists' Exposition will be held at Munich from August 14 to 31, 1913.

CENTRAL ASSOCIATION OF GERMAN RUBBER MANUFACTURERS.

At the general meeting of the Central Association of German Rubber Manufacturers, held in Berlin on May 3, the opinion was unanimous that makers have no reason at present to quote reduced prices. It was pointed out that the quotations for crude rubber differed but slightly from what they were when the last prices of goods were fixed. Furthermore, manufacturers have in many cases stocks of dear rubber, while the other elements of cost are constantly advancing. Even if the prices of crude rubber present certain advantages under special circumstances, these are needed, it was urged, for healing old wounds, and for recouping former losses, instead of spoiling the market by low quotations.

With regard to crude rubber, it was, moreover, represented that it is only a question of time when the price will again be generally higher, while Pará may advance any day. It would be difficult to restore the selling prices which would be affected by reductions at this time.

It would be specially unsafe to reduce prices of goods in which rubber, although a component, does not represent the predominant factor of value. A resolution was adopted expressing the opposition of the assembled manufacturers to any reduction of prices.

The meeting was under the presidency of Herr Kommerzienrat Hoff, who, in his opening address, reported that while in the business year—April to April—most factories had been well occupied, results could not be generally described as favorable. He attributed the reason in a great measure to the labor question. It was for manufacturers to prevent outside organizations from exercising any influence in their factories, at the same time promoting measures for the benefit of the workers.

Herr Hoff likewise drew attention to the need of combined action on the part of manufacturers with respect to the conditions of tender and guarantee in furnishing supplies to railways, expressing the opinion that the conditions of guarantee for brake and heating hose included some which could not be fulfilled. The association would again take up the matter with the railway administrations with a view to the needed reforms being carried out.

With regard to next year's London Rubber Exhibition, it was unanimously resolved that the participation of the German industry is desirable. Kommerzienrat Seligmann, who will be at the head of the German section, urged the necessity of such participation in order to claim the merited attention for German goods.

The annual report dealt, among other subjects, with the difficulties arising from certain legislative enactments prohibiting the employment of rubber containing lead or zinc for nipples, etc. Such articles are bought in foreign countries and the inability to furnish them forms an obstacle to German export trade.

For the purpose of allowing the needful representations to be made to the proper authorities with respect to the Putumayo atrocities, a resolution was adopted promising the moral and financial support of the association in such a course.

INCREASED PROFITS OF BELGIAN RUBBER COMPANY.

The report of the Société Anonyme pour le Commerce et l'Industrie du Caoutchouc, Brussels, shows the profits for the last three years as equalling: 1910, \$48,632; 1911, \$65,416; 1912, \$84,092. These figures show a healthy development of the company's profits.

AMERICAN TIRES IN ITALY.

United States Consul Piero Gianolio, of Turin, reports the fact that although the French Michelin Co. has a large factory at Turin, and tires are also furnished to that market by Pirelli & Co., Milan, foreign makes are still imported in great quantities. Among them are the Continental, Dunlop, Goodrich and Palmer tires.

RUBBER TRADE IN JAPAN.

By Our Regular Correspondent.

TOY RUBBER BALLOONS.

THE Japanese factories specially devoted to the manufacture of rubber toy balloons number about 30 in Tokio and 12 in Osaka. Several hundred factories, however, make this article as a supplement to their regular production. Crude rubber is used to the aggregate extent of about 250,000 pounds a year, the principal descriptions employed being Pará sheet and biscuit, in addition to Borneo rubber.

Imports of toy balloons ceased some years ago, the domestic production having been so placed as to exclude foreign competition. The makers of toy balloons have been working under the Japanese patent No. 8785, issued in May 1905 to Mr. A. Fukumori, the inventor of the process thus patented.

Briefly described, the process consists in the rolling of Pará, Indian, Borneo, or other grades of rubber, after mixing, through rollers at a high temperature. After being dissolved with volatile oil, the needed coloring substances are added. These rubber solutions are each kept in a metal or glass box, closing tightly, to prevent volatilization.

Various kinds of molds have been tried in succession, metal, china, and glass molds having been made. From being at first round, their shape has now changed to oval, like the top of a small spoon. The mold has a long handle, by which it is dipped into a solution of chloride of sulphur to facilitate vulcanization.

Dipping the mold into the rubber solution produces a membrane of rubber on the surface of the glass, this membrane attaining a suitable thickness after having been several times immersed. When the mold has been kept for three hours in a clean room to dry, the membrane is vulcanized by dipping it into a solution of chloride of sulphur for one second, this solution being on the basis of one ounce of chloride to half an American gallon of volatile oil. When the vulcanization is concluded, the rubber membrane is peeled from the glass mold and a seamless rubber toy balloon is thus turned out.

Such are the principal features of Mr. Fukumori's patent, of which he claimed that the process of Mr. K. Ogata and the late Mr. R. Kotake was an infringement.

In 1905 the lowest grade of foreign toy balloon was sold at 50 yen (25 cents) a gross; the same thing being now produced in Japan at 15 sen (about 7½ cents) a gross. The Japanese manufacturers who then went into the production of toy balloons made large profits and became wealthy in a few years.

Owing to its simplicity, the patent of Mr. Fukumori of 1905 was infringed by a number of manufacturers. He attached the factories of 20 in Tokio and 7 in Osaka, and 7 succeeded in arranging for a royalty in every case except one, in which a compromise was effected. In many instances, however, the manufacturers did not pay the stipulated royalty, and Mr. Fukumori was forced to take further steps. In 1907, being tired of thirteen years' litigation, he gave up his patent rights, since which time they have been open, with the result that the industry has freely developed. The method has been applied to nipples, finger cots, water pillows, etc.

Toy balloon factories employ many female hands. Among their manufacturing economies is the dipping of 100 molds at one time into the chloride of sulphur solution, each containing a membrane of rubber.

The average daily wage of the women balloon makers is 20 sen (10 cents) for ten hours. Other female hands get the same or a little more. The average daily rate of rubber manufacturing hands (male and female) is 50 sen (25 cents) for ten hours. This low rate of hand labor is calculated to encourage foreign manufacturers contemplating the establishment of factories in Japan, in the same way as has been done by the Dunlop Rubber Co. Far-East, and the Ingram Rubber Co. of Japan.

Toy rubber balloons are principally manufactured from September to February, and to a lesser extent between March and August, vulcanization during the latter period being more difficult. The same manufacturers produce a rubber toy operated by blowing, in which, however, only Pará rubber is used.

Out of the forty toy balloon manufacturers in Japan, three are of importance and finance the smaller makers. They buy the product of the latter for distribution in the cities, towns, and villages of Japan, Corea and China. These three are: C. Kamijo, Sekiya Rubber Branch, and T. Nishimura; all of Tokio.

It is reported that in order to profit by the cheap labor in Japan, a company will be established to export this article. The project is said to have the financial support of a foreign oil company.

JAPANESE RUBBER IMPORTS.

Comparative statistics published of the Japanese crude rubber imports for 1911 and 1912 show some interesting facts. The figures are as follows:

JAPANESE CRUDE RUBBER IMPORTS.

From	1911. Pounds.	1912. Pounds.
British Straits Settlements.....	1,223,071	1,214,485
Great Britain	426,013	242,620
British India	121,160	167,063
Dutch India	132,173	124,904
French India	not specified	3,805
United States	112,170	158,176
Germany	4,588	25,600
Mexico	not specified	113
Other countries	35,689	66,977
China	not specified	267
Total pounds.....	2,054,864	2,004,010

While the net average reduction equals about 2½ per cent., the difference varies in the cases of different countries. While there is a diminution of about 40 per cent. in the imports from Great Britain, there is a sixfold increase in the quantity from Germany, and that from "other countries" is nearly doubled.

In one respect the two years show a like result. The British Straits Settlements in each case supplied about 60 per cent. of the total Japanese crude rubber imports.

That, notwithstanding the development year by year of the Japanese rubber industry, the imports of crude rubber should show a decrease, is a fact which has been attributed to several causes. Japanese manufacturers used in 1912 an increased quantity of reclaimed rubber, of their own reclaiming or purchased in that condition. Another cause was the reduced consumption of "tabi" soles, used by the Jinrikisha men. The development of automobile and electric railway traffic was felt in the reduced demands of these men for the soles named. Still another reason was the general mourning for the late Emperor of Japan, which checked jinrikisha riding. While reclaimed rubber is the principal compound of "tabi" soles, a certain proportion is crude rubber, so that the imports of the latter were to a certain degree affected by the above-named cause. Some of the "tabi" manufacturers, however, turned to making rubber soles for Chinese sandals, and thus to a certain extent offset the falling off in the demand for their products.

RUBBER JINRIKISHA TIRES FOR MANCHURIA.

Solid rubber tires are said to have good prospects in Manchuria. Last spring forty pairs were imported from France, at Hoten, the capital of Hoten-Sho, where all the jinrikishas in the city have changed from iron to solid rubber tires. For this purpose, 2,000 pairs were imported from Japan.

DEATHS OF NOTED RUBBER MEN.

Mr. E. Sugii, proprietor of the Sugii Rubber Works, Tokio, recently died from heart failure. He went to the United States in 1905, where he entered Yale University. After his return to Japan, he established the East Marine Insurance Co., the Commerce Bank, and the Sugii Rubber Works.

Mr. J. Iwaya, Japanese vice-consul at Singapore, has died of brain fever. He frequently reported to his government on Malayan and Dutch Indian plantations, and contributed to the development of rubber planting with Japanese capital.

Mr. Isamburo Yamada, the first aviator and airship constructor in Japan, lately died, from a carbuncle. His experiments had lasted from 1897 to 1904. His airships, which are oval in style, as shown by the illustrations in *THE INDIA RUBBER WORLD*, December, 1911, were the only kind used in the Russo-Japanese war. There is no metal used in their construction, and their weight is consequently light. His funeral was attended by many prominent officials and other personages.

NEW JAPANESE COMPANIES.

The Kinshu Electric Wire Co. has been established at Osato, Fukuoka-Ken, with an area of $1\frac{1}{4}$ acres, of which about one-third is built on. The machinery has been installed by Birmingham makers and by the Japanese Iron Works of Tokio, the total capacity being 100 h. p.

In the equipment are included: 1 calender, 1 mixing roll and 1 washing roll. The product includes weatherproof wire, rubber wire, silk or cotton cord, lead tubes, etc. The officials are: President, S. Fujinami; director, S. Higase; manager, T. Seida, and expert S. Uemura.

The Taisho Rubber (Watanabe's Works) was established through the purchase by N. Watanabe, of the Tokai or Kwanto Rubber Works of Tokio, which were in financial difficulties. Its equipment consists of a 40 h. p. boiler and 15 h. p. engine, 2 mixing rolls and three vulcanizers. The product consists of "tabi" and "zori" soles.

NOMOTO RUBBER WORKS BURNED.

The rebuilding of the Nomoto Works, of Tokio, burnt in March last, is being actively proceeded with. In compliance with the wishes of the owners of adjoining premises, a three-foot wall is being erected, encompassing the factory, to diminish the risk of fire spreading.

WHEELS WANTED FOR RICKSHAWS.

According to the report of an American consular officer in the Far East (published under No. 11015, by the Bureau of Foreign and Domestic Commerce, Washington, D. C.), there is a considerable market at that point for wheels for rickshaws. A local company would be glad to hear from manufacturers of these wheels, with a view to taking an agency. The specifications furnished by this company are as follows: Wheels, 32 inches in diameter from rim to rim, not counting pneumatic tire or cover; hubs, extra strong, 4 inches between flanges, having $\frac{3}{4}$ -inch spindles, or screwed right and left to suit tubular axle; rims, $32\frac{1}{2}$ by 2 inches, to take tires 36 by 2 inches, made of steel $17\frac{1}{2}$ gauge; axle, tubular, either plain or screwed right and left to suit hub spindles; spokes, best quality, strong gauge, tangent spokes, and nipples to suit.

Vice-Consul Raymond S. Curtice, of Dalny (Darien), also reports that pneumatic-tired jinrikishas have recently been imported at Dalny from Shanghai, the wheels being of smaller diameter than the rubber-tired jinrikishas of Japanese make. The suggestion is made that American rubber manufacturers should note this possible opportunity for extending trade.

PROGRESS OF THE RUBBER INDUSTRY IN DUTCH GUIANA.

By a Resident Correspondent.

IT has long been known that the rubber tree grows in Dutch Guiana, but it has been cultivated commercially on an extensive scale for only a few years, the plantations being situated along the banks of some of the great rivers of the colony.

It is unnecessary to discuss the adaptability of the soil for growing rubber here, for no less an authority than the Editor of *THE INDIA RUBBER WORLD*, who visited the colony some years back, has declared that the common soil was equal to the best he had seen in the Malay country.

The colony is undergoing a great change in regard to its rubber raising industry, which will undoubtedly prove a source of wealth to those who have already invested, and to others who may put money into rubber growing in the colony. It will be interesting, however, to learn that in all the plantations on which Pará rubber—*Hevea Brasiliensis*—has been planted, the rapid growth of the trees and the large returns in latex have astonished visitors from other rubber producing lands. These facts certainly go to prove that the soil in Dutch Guiana is admirably adapted to the successful cultivation of this product. On plantation "Voorburg," for instance, during the month of March of the present year, tapping operations with 51 laborers at a cost of fl. 31.60 (\$12.64) per day, yielded on an average 15 kilograms (33 lbs.) rubber per day. The total expenses, including preparation, etc., came to fl. 3 (\$1.20) per kilogram (2.2 lbs.). Two hundred tapping days are calculated upon in the year, which would bring the production up to 3,000 kilograms at a total expense of fl. 6,320 (\$2,528), as against a market price of fl. 5 (\$2) per kilogram; which shows a profit balance of fl. 8,780 (\$3,512). These returns and costs of production from only one plantation with about 7,000 trees, now nearing maturity, will be sufficient evidence that the rubber industry in the Dutch colony will prove highly remunerative, even when the market price of rubber stands at a lower figure than that used in the calculations above. It must also be remembered that the returns in rubber will be increased yearly as the trees grow older.

A little word of advice to those anticipating rubber ventures in the colony may be timely, and may help to remove any prejudicial feelings caused through misleading statements emanating from the late pessimistic Director of Science and Agriculture. This official, for reasons of his own, tried to impress the idea upon the public that the rubber industry in Dutch Guiana would never be remunerative; at least that it would not be nearly as productive as, for instance, in the Far East, where he claims that the soil conditions are superior. It is not our intention to comment too strongly on the unjust statements of this gentleman, as he has since been removed from the colony, for the colony's good, and sent to another part of the globe where he is likely to do less harm. Dutch Guiana is passing through a period of misfortune, and her good name must always be safeguarded against such unwarranted attacks, especially when she is endeavoring to make good what she has lost through repeated "black eyes" from some of her own sons. Incorrect statements from high officials, if left unchecked and unchallenged, tend to convey wrong impressions to those who may be inclined to consider the colony seriously at some time or another. It is pleasant, however, to know that in the face of all the false statements that have gone out from here—and which have been allowed so far to remain uncontradicted by those who by virtue of their prominent official positions, should be the first to make every possible effort to spread the truth about the colony—plantation "Nieuw Clarenbeck" was sold at public auction to an American combination.

We repeat, and with the strongest emphasis possible, that the future of Dutch Guiana as a rubber producing country is assured; and we are prepared at any time to contradict any incorrect statements that may be damaging to its reputation.

NOTES FROM BRITISH GUIANA.

By Our Regular Correspondent.

THE BALATA INDUSTRY.

SOME interesting figures respecting the local balata industry have recently been furnished by the Comptroller of Customs in his annual report for 1912. The statistics given in that report show that last year the output of balata declined by the large total of 446,196 pounds, the value of this reduction being \$219,860.22. The Comptroller points out that this reduction is a direct result of the drought, saying: "The upper reaches of the river were so dry that the despatch of expeditions to many of the tracts was considerably delayed; and so the bleeding season was much shorter than usual. The collectors found when they did commence work, furthermore, that the long spell of dry weather had so affected the balata trees that in the process of tapping the yield of latex was much below the normal." Doubtless the drought was the dominant factor, but it is possible that the failure of one or two companies exercised some small influence on the output. The year was an exceedingly bad one, as the figures for the past five years show: 1908-9, 1,090,405 pounds, value \$471,076.19; 1909-10, 1,034,076 pounds, value \$486,034.81; 1910-11, 1,162,588 pounds, value \$670,192.32; 1911, 1,152,410 pounds, value \$707,284.28; 1912, 705,214 pounds, value \$481,423.96. This year has witnessed a large increase in the exports of balata, and hopes have been entertained that the industry had excellent prospects. The rumors, however, of shortage of rain in the interior, of which I wrote last month, have proved true, and according to information direct from the bush, the bullet trees are budding and it is impossible to bleed them. There is at present in the colony Mr. R. Morrisson, a director of what we formerly called the Demerara Rubber Co., now known as the Demerara and Coverden Produce Co. Mr. Morrisson came out here towards the end of last year, and in January he accompanied the company's balata expedition to the Rupununi District. He has recently returned to town, and has expressed the opinion that the prospects in connection with the balata industry are very poor.

NEED OF RAILWAY BUILDING.

One of the most serious obstacles with which those engaged in the collection of balata in this colony have to contend is the difficulty of traveling in the interior, with the consequent loss of time. The building of a railway, which is still being talked of but about which nothing definite done, would revolutionize the balata industry here. One of the latest proposals in this connection is the construction of a line of railway along the coast of the County of Essequibo, to connect the colony with the Yurawai River District of Venezuela, in the province of Upata. An expedition recently went out to that district from this colony and found the whole region along the route which it has been suggested should be taken by the railway, extremely rich in balata and other products. It is generally believed that if satisfactory arrangements could be entered into with the government of Venezuela for the building of such a railway, along the route I have mentioned, the balata industry of both this colony and the neighboring Latin-American Republic would be greatly benefited. Now that the prohibition of the importation of Venezuelan balata into this colony has been removed and it is allowed to come over the border on the same footing as the local product, viz., by paying a royalty to the British Guiana Government of two cents per pound, collectors of the latex in the Republic are glad to take advantage of the close proximity of the town of Morawhanna, in the northwest district of this colony, from which point there is a regular weekly service of steamers to the port of Georgetown for the shipment of their balata. In forwarding it by this route, collectors in Venezuela effect a considerable saving, for the expense of transporting the product of the expeditions to the nearest Venezuelan port is much heavier, the distance being so much greater. With the proposed railway in operation, transport would be still easier, and the balata in-

dustry in both countries would no doubt receive a great impetus. Unfortunately the lack of railway communication is not the only disability from which the Northwest District of the colony suffers. Dry weather is at present being experienced there, and during the past few weeks if it had not been for the fact that there is a good spring at the rubber station at Ossororo the members of expeditions would have suffered acutely. There are no water pumps in the district, and these are urgently required. The town of Morawhanna, which is the point from which the actual journey to the interior commences, is less than two hundred miles from the capital, but a weekly steamer service has to suffice. Recently His Excellency the Governor (Sir Walter Egerton) made a tour of the district, and the fact that in the course of his journeys he experienced considerable difficulty in traveling has aroused in the breasts of collectors of balata some hope that he will now realize the difficulty attending the prosecution of bush enterprises in this colony, and will extend a meed of sympathy to them.

DIFFICULTIES OF NAVIGATION.

The difficulties that attend the collection of balata would be infinitely less serious if good and experienced bushmen were more plentiful. Even with the most experienced man in charge of an expedition, the difficulties are very serious, as the following account, written to the "Chronicle" by a boat hand, will show: "It may, I think, interest a few of your readers (especially those concerned in the balata industry) to hear of a couple of experiences gained by one who has recently made his first trip to the Rupununi and back. The boats leaving Rockstone have failed pointedly to make the journey under a month, and this too (to use a common phrase), with severe blows, all owing more or less to the heavy dry weather prevalent in the district for the last six weeks or thereabout. Hence, Captain James McDonell, of the firm of Garnett & Company, and his four associates, deserved to be complimented on the manner in which they conveyed to Rockstone on the return trip, from the station known as Inkapati, for Messrs. Sproston, Limited, one steam launch, one boat and seven steam barges, completing the task in the short space of eleven and a half days without an injury happening to any of the crafts. But for the coolness, the courage and quick presence of mind of this worthy captain, only half of the journey might have been made within that space of time, and who knows if some of these crafts might not have been badly injured, for I many times thought they would be dashed to pieces between the rocks, when such falls as Itonomi, Twashing, Abaquia and Waraputa had to be crossed. Thanks to the humane disposition of Captain McDonell and a few others of his skill and daring, or we should hear of many more accidents than those reported year by year from the Essequibo River when the balata season comes round. Indeed, our children and grandchildren will certainly bless that day when there shall be a railway running between Georgetown and Brazil, whereby much time and comfort will be gained, and whereby we shall feel less anxious about the safety of our lives than hitherto, in traveling through the interior of this colony."

GOVERNMENT BALATA SALES.

Considerable dissatisfaction exists here at present with the system in vogue as to the government balata sales. It appears that the Commissioner of Lands and Mines insists on only sending out circulars inviting tenders for the purchase of balata to those who are holders of balata tracts, instead of putting up the lots to public auction. It is argued that there may be others besides those mentioned above who would be prepared to make bids, but who, under existing circumstances, are ignorant of the sales. I understand that it is not necessary to take out a license in such a case, if one intends to ship the balata away forthwith, but only if it is intended to re-sell in the colony. It is thought that better prices would be realized by public auction than by tender, and that it would be more satisfactory all around.

Some Rubber Planting Notes.

RUBBER STANDARDIZATION IN THE FEDERATED MALAY STATES.

MR. LEWTON-BRAIN, the Director of Agriculture of the Federated Malay States, has been prominent in advocating the standardization of rubber. He has recommended the appointment of two additional chemists to supplement the present staff, with a special view to the efficient treatment of the question.

In supporting the proposal of Mr. Lewton-Brain, the "Malay Mail" enumerates various points in which the fact that the average planter is not deeply versed in chemistry would render invaluable the advice and suggestions of thoroughly professional men. Among such points is the question of premature tapping in order to provide dividends for expectant shareholders, as well as whether age does or does not increase the rubber content in the latex.

The opinion is finally expressed that some very useful results may be anticipated from the proposed addition to the chemical staff of the Department of Agriculture, in conjunction with the new experimental vulcanizing plant acquired by the government of the Federated Malay States. The information thus obtained should, it is added, do much toward bringing about the general standardization of Malayan rubber, which the plantation industry now so greatly desires.

DR. RIDLEY ON PROSPECTS OF RUBBER CULTIVATION.

Dr. H. N. Ridley, late Director of the Royal Botanic Gardens, Singapore, recently expressed the opinion, in a newspaper interview, that there is a great future before Malaya, the rubber plantations of which are enormous as compared with Ceylon.

As to manuring, he thought the time was coming when planters would go in for it scientifically and regularly. In the same way as in the cultivation of agricultural crops, he thought fertilizers would play an important part in rubber production in the future.

Referring to his recent visit to India, he stated that the whole of the plains, from Rajputana to Travancore, was in a backward way as regards agriculture and should be developed.

With reference to processes of curing, he had seen Mr. Wickham's system work and thought it extremely useful.

VARIATION IN QUALITY OF PLANTATION RUBBER.

The report of the Rubber Growers' Association for 1912 speaks of the New York Exposition having been a great success, especially with regard to trade. It is added that the chief American criticism was on the great variation in quality of the plantation product.

At the annual meeting the chairman, Mr. Noel Trotter, urged that if lower grades were better prepared more could be sold on reputation instead of on sample. He urged the standardization of the lower qualities, attention to washing and preparing scrap, and the uniform packing of various grades.

With regard to the near future of prices, Mr. Trotter was optimistic, urging, however, the necessity of economy in cost of production, freights and dock charges.

Mr. Noel Trotter was elected president of the Association and Mr. John McEwan vice-president.

CENTRAL FACTORIES FOR SMALL RUBBER ESTATES.

The plan of central factories for small rubber estates has been advocated by the Malayan press, and the idea has met with approval in the English financial papers. Such an arrangement, it is urged, is likely to make for economy in working and for uniformity in the type of rubber produced.

MR. LAMPARD ON THE RUBBER OUTLOOK.

Presiding recently over the annual meeting of the London

Asiatic Rubber and Produce Co., Ltd., Mr. Arthur Lampard expressed his conviction that there was nothing in the statistical position to cause the slightest uneasiness to shareholders. Stocks in Liverpool and London at the end of December were lower than in either 1911 or 1910. At the end of March, 1913, stocks were 5,968 tons, or 1,530 tons more than in 1912, but considerably less than at the same date in 1911, when the pure was 6s 1½d, (\$1.47) compared with 3s 8d. (88 cents) on March 31, 1913. Practically the whole increase had been in plantation rubber. He believed that the drop in price would not be permanent, and that it would not be injurious to the cultivated rubber industry, though it might chasten it a little.

EXPERIMENTAL STATION ON THE MADRE DE DIOS.

Don Emilio Castre, a rubber expert who represented Peru at the International Rubber Exposition in London in 1910, is on his way, with a staff of assistants, from Callao, Peru, by way of Cuzco, to the Madre de Dios river, where they are going to establish an agricultural experimental station in some place to be selected by them which combines the best prospect of producing not only rubber, but food supplies. Don Castre has spent some time in Ceylon, studying rubber cultivation in that part of the world.

EASTERN CROP RETURNS TO END OF MAY.

According to cabled returns to the end of May, the largest plantation companies still show a progressive increase of output. Thus the Anglo Malay Rubber Co. reports for five months 516,080 pounds, against 307,498 pounds for the corresponding period a year earlier. For a similar time the London Asiatic Rubber and Produce Co. shows 362,589 pounds, as compared with 218,705 pounds; while the Selaba Rubber Estates produced 161,528 pounds in comparison with 111,288 pounds. The Sungkai Chumoor Estates record for the 11 months ending May 31 a crop of 253,214 pounds, against 98,249 pounds for a similar period in 1911-1912.

The United Serdang (Sumatra) Rubber Plantations (Ltd.) produced in the 9 months ending May, 1913, 800,976 pounds, the product for a similar period terminating May, 1912, having been 347,658 pounds.

POUNDS OR TONS.

It has been suggested that the returns of the monthly output by plantation companies should be published in tons instead of pounds, the present form becoming increasingly unwieldy and being likely to become still more bewildering to the reader as production further increases. Forward contracts are already made, as a rule, in tons, but at prices per pound. The long ton of 2,240 pounds being about equal to the metric ton of 1,000 kilos or about 2,204 pounds, comparison of statistics would be facilitated by the proposed new form of return.

A RUBBER RING IN LONDON!

The annual report of the Selangor (Malaya) Chamber of Commerce for 1912 states:

"For the producer, a serious development has lately taken place in London, where the dealers and brokers have come to an understanding, and formed a ring, making it impossible for the manufacturer in the future to deal direct with the producer."

Should be on every rubber man's desk—Crude Rubber and Compounding Ingredients; Rubber Country of the Amazon; Rubber Trade Directory of the World.

SANITATION IN CEYLON.

Sir Patrick Manson, the well-known expert on tropical diseases, recently paid a visit to Ceylon. In an interview before starting for home he said:

"There is no proper sanitation at all in the planting districts. Whatever sanitation there exists is of a very elementary kind. The Government is doing its best now to improve matters by starting a research institute and, laying down the lines of a sanitary system. But much cannot be done without the co-operation of the planters themselves, and such co-operation is very badly needed."

It is of interest to note that active measures are being taken for the establishment of a Sanitary Department for Ceylon. A committee has been investigating the question.

MR. WICHERLEY AGAIN IN CEYLON.

Mr. William Wicherley lately revisited Ceylon to look after his business interests in the island. Another object of his visit was to demonstrate a new rubber curing machine, which he described as a cheap portable machine, furnishing not only a ready but economical method of making rubber.

The speaker gave some interesting facts about rubber seed oil. His own plant at Grand Pass is already shipping prepared kernels yielding oil of very fine quality. The average yield of oil was 50 per cent., while the residue has sold very readily at a price equal to that of the best linseed cake. He was to return to England in June and to again visit Ceylon in October.

CEYLON PLANTERS EVERYWHERE.

Mr. Jesse Davis, the ubiquitous ex-Ceylon planter, who lately revisited the island, has stated that he had found the Ceylon planter in all parts of the world where he had been, particularly on the East Coast of Africa, where they were planting rubber, coffee and cocoa nuts.

COST OF CEYLON RUBBER PRODUCTION.

In a recent newspaper interview the Hon. F. W. Collins, general manager of the Malacca Rubber Plantations, Ltd., summarized the results of a month's stay in Ceylon, during which time he had visited a number of the leading rubber plantations. What struck him most favorably was the low cost of production. On some of the estates he had visited the cost is very much lower than it is in the Straits. This, he understood, was largely due to Tamil labor only being employed. Some estates are said to be putting their rubber in Colombo at as low a cost as 8½d. (17 cents).

With regard to yield, Mr. Collins had found the best Ceylon estates producing under 300 pounds of rubber per acre at seven years' old. At that age, some of the best estates in the Straits run to 450, and even 500 pounds per acre. The greater productivity in the Straits he attributed to climate and soil.

As to labor, Javanese coolies had been found the most economical in the Straits, but they had to work mainly with Chinese labor, which was plentiful but costly. In conclusion, Mr. Collins said: "We hope either to bring down the pay of the Chinamen, or to get a larger amount of work from them than we do at present."

These statements from the general manager of one of the largest Malayan companies, are of interest in connection with the proposed introduction of Chinese labor into Brazil.

THE NEW CEYLON DEPARTMENT OF AGRICULTURE.

Official notice has been received from Mr. R. N. Lyne, Director of Agriculture, Peradeniya, Ceylon, that the Royal Botanic Gardens Department has been replaced by a Department of Agriculture. The hope is expressed by the director that the cordial relations hitherto existing between THE INDIA RUBBER WORLD and Peradeniya, will be maintained under the new arrangements.

THE TROPICAL AGRICULTURE COLLEGE.

In a letter to the London "Times," Professor Wyndham Dunstan, president of the International Association of Tropical Agriculture, has advocated the selection of Ceylon as the site of the proposed Tropical Agricultural College. He proceeds to say that Ceylon is best suited for an agricultural college, as it possesses a variety of climates, and opportunities for studying rubber, tea, coconuts, and other tropical crops. It has a large, influential and enterprising planting community, both European and native, and also has the advantage of an agricultural department. Training in Ceylon, following a home course, should, in his opinion, qualify agriculturists for any part of the tropical world.

Commenting on the above and other proposals for a tropical agricultural college, "Tropical Life," of London, remarks: "We feel, therefore, now that East and West have both had their cause fully and carefully laid before the government and the public, it is for them to see which center should have the first college, until, we hope, in the near future, each will have its college of agriculture."

The fact is also referred to that there is a budget of £195,000,000, but not a cent for tropical medicine and education.

WHY RUBBER FELL.

In discussing the causes of the recent fall in rubber, at an interview reported in the "Financial Times," Mr. T. E. Williams, of Messrs. Marling, Evans & Co., London, stock brokers, attributed the decline, in the first place, to the tightness and dearth of money, both in England and abroad, due to the world-wide prosperity having led to overtrading. Further contributory factors have been the war in the East, the war scares in England, and the trade difficulties in America.

Mr. Williams further pointed out that of the \$450,000,000 invested in the plantation industry by English companies, probably three-fourths of the total is under the direct and indirect influence of people who are closely associated with the rubber industry and thoroughly understand the position. Yet there has been no selling of any importance traceable to such sources, those who are most thoroughly conversant with the conditions of the industry evidently showing the greatest confidence in its stability and continued prosperity.

The opinion was likewise expressed by Mr. Williams that owing to their increasing output, forward sales and lower production costs, a large number of companies will be able to maintain a return of 10 to 14 per cent. on the present price of their shares, with rubber where it then stood (about 3s. 4½d.). This, he added, would be subsequently possible, even with rubber on a declining scale of 3s., 2s. 9d., and 2s. 6d. in 1914, 1915 and 1916, respectively.

Regarding the growth of consumption, he added, in every civilized country the horse is being replaced by the motor. The use of commercial cars, requiring solid tires, is growing at a phenomenal rate, while the demands of the electrical and other industries are constantly increasing.

Finally, Mr. Williams expressed the conviction that the present low price of rubber is largely due to exceptional circumstances, which are now well known and will soon pass away. The low prices have permitted the "rubber barons" who had sold forward at 4s. and over, to cover their contracts, and to secure cheap rubber, with the expectation of higher prices when the ordinary trade demand gets into its stride again.

PENSIONS FOR ASSISTANT PLANTERS.

The Amsterdam Langkat Co. is said to have formulated a scheme for pensioning assistant planters who have been in its employ for fifteen years, the pension obtainable being 1,000 guilders (\$400) per year. Monthly premiums are to be paid, on a graduated scale. Pension schemes have also been drawn up by other Dutch companies.

Recent Patents Relating to Rubber.

UNITED STATES OF AMERICA.

ISSUED MAY 6, 1913.

- N**O. 1,060,624. Means for tripping the inking rollers of printing presses. H. Pearce, R. G. Parker and F. W. Wright, Broadheath, assignors to Linotype and Machinery, Ltd.—both of England.
- 1,060,777. Nipple for nursing bottles. H. J. Maynard, Newton Highlands, Mass., assignor to Thermolac Mfg. Co., Boston, Mass.
- 1,060,852. Vacuum massage device. F. O. Parker, Washington, D. C.
- 1,060,854. Pneumatic wheel. N. Peterson, Teton, Idaho.
- 1,060,886. Insulator. J. E. Bicknell, assignor to the Findlay Electric Porcelain Co.—both of Findlay, Ohio.
- 1,060,889. Life preserver. K. Brauer, Lyndhurst, N. J.
- 1,060,964. Vacuum cleaner. J. T. Atwood, Rockford, Ill.
- 1,061,015. Tire tool. G. Schaefer, New York.
- 1,061,017. Hose supporter. M. W. Schloss, New York.
- 1,061,069. Inner tube valve. J. S. Harber, Youngstown, Ohio.
- 1,061,184. Alarm for tires. H. E. Knies, White Haven, Pa.
- 1,061,200. Tire alarm. J. B. Polo, Clear Lake, S. D.
- 1,061,204. W. T. Smith and C. C. Royer—C. C. Royer assignor to M. Smith—all of Bellefontaine, Ohio.
- 1,061,207. Rubber compound. E. Von Vargyas, Pittsburgh, Pa.

Trade Marks.

- 68,088. The H. O. Canfield Co., Bridgeport, Conn. The word *Canfield*. Rubber goods for plumbers' use.
- 68,356. The Manhattan Rubber Mfg. Co., Passaic, N. J. The word *Master*. Rubber gland packing for steam engines, etc.
- 69,390. Hanover Vulcanite Co., New York. The words *The Golf Club*. Combs made of hard rubber.
- 69,433. Converse Rubber Shoe Co., Malden, Mass. The words *Rabbit's Foot*, over an illustration of a rabbit.

ISSUED MAY 13, 1913.

- 1,061,275. Life preserver and pillow. S. P. Edmonds, Catonsville, Md.
- 1,061,344. Vehicle wheel. M. S. Weist, Sedalia, Mo.
- 1,061,369. Safety device to keep wheels from sliding. J. A. Gruber, Cincinnati, Ohio.
- 1,061,391. Tire patching device. G. J. Martel, Chicago, Ill.
- 1,061,472. Pressure gage. G. T. Hackley, Los Angeles, Cal.
- 1,061,523. Tire armor. J. J. Bukolt, Stevens Point, Wis.
- 1,061,524. Tire armor. J. J. Bukolt, Stevens Point, Wis.
- 1,061,539. Apparatus for administering narcotics. G. Haertel, Berlin, Germany.
- 1,061,566. Bathing brush. J. H. Pride, Kidder, S. D.
- 1,061,664. Combined corset and abdominal supporter. E. Drenshtein, New York.
- 1,061,686. Wrist and sleeve protector. P. J. Nichols, Ames, Colo.
- 1,061,693. Fountain pen. D. W. Schnebbe, New York.
- 1,061,722. Device for shaping the outer casings of pneumatic tires. G. W. Bell, Stockport, England.
- 1,061,748. Filler for ink wells, etc. J. W. Jacobus, Great Neck, N. Y.
- 1,061,807. Tire. W. A. Binion, Newark, N. J.
- 1,061,816. Demountable rim. J. H. Champ, assignor to The Standard Welding Co.—both of Cleveland, Ohio.
- 1,061,872. Nozzle for fire extinguishing apparatus. F. von Schildowsky, St. Petersburg, Russia.
- 1,061,905. Tire fastener. L. G. Fleming, Tarrytown, N. Y.
- 1,061,927. Tire. S. Scognamiglio, New York.

Design.

- 44,042. Waterproof cap covering. P. G. Tilton, Melrose, Mass.

Trade Marks.

- 62,081. Main Belting Co., Philadelphia, Pa. The word *Anaconda*. Machine belting.
- 68,791. Traun Rubber Co., Hoboken, N. J. The word *Golddust*. Dental rubber.
- 68,910. American Gum Products Co., Boston, Mass. The word *Goulag*. Manufactured gum.
- 69,076. Samuel C. Beck, Chicago, Ill. The name *S. C. Beck's* written through square of rubber.
- 69,431. The Mindease Co., Louisville, Ky. The word *Mindeass*. A preparation for filling automobile tires.

ISSUED MAY 20, 1913.

- 1,062,024. Pneumatic tire. A. H. Morton, Cleveland, Ohio.
- 1,062,070. Tire armor. S. F. Wilcox, Garden City, N. Y.
- 1,062,072. Apparatus for vulcanizing rubber articles and the like. J. S. Wilson, Chelsea, Mass.
- 1,062,155. Flexible hose protector. J. D. Harris, assignor to The Westinghouse Air Brake Co.—both of Pittsburgh, Pa.
- 1,062,158. Truss. A. M. Hurel, New York.
- 1,062,160. Elastic pocket for garments. R. E. Kelly, Coconut Grove, Fla.

- 1,062,260. Wheel for vehicles. C. C. Sill, Seattle, Wash.
- 1,062,338. Detachable boot or shoe heel. P. Kane, North Brookfield, Mass.
- 1,062,401. Pneumatic tire cover. J. T. Johnson and F. G. Mason, Caulfield, Victoria, Australia.
- 1,062,426. Puncture closing compound. W. J. Watkins, Fort Worth, Texas.
- 1,062,435. Life preserver suit. J. W. Buchanan, Asheville, N. C.
- 1,062,462. Tire support. A. Harnishfeger, Evansville, Ind.
- 1,062,519. Vehicle wheel. W. T. Thorp, Litchfield, Ill.
- 1,062,535. Composition of matter to be introduced into the inner tubes of pneumatic tires for rendering the tires puncture proof. T. S. Causey, Arlington, Texas.
- 1,062,567. Tire deflation indicator. H. Jacoby, Eberstadt, near Darmstadt, Germany.

Design.

- 44,062. Resilient tire. H. H. Hewitt, Buffalo, N. Y.

Trade Marks.

- 60,511½. The Mechanical Rubber Co., New York and Cleveland, Ohio. The word *Meruco*. Rubber mats.
- 60,512½. The Mechanical Rubber Co., New York and Cleveland, Ohio. The word *Meruco*. Rubber water bottles and syringes.
- 60,513½. The Mechanical Rubber Co., New York and Cleveland, Ohio. The word *Meruco*. Rubber tubing.
- 68,002. The Seamless Rubber Co., New Haven, Conn. Fleur de lis in circle with the above company's name and address around same.
- 69,821. The Beacon Falls Rubber Shoe Co., Beacon Falls, Conn. The words *Rock Ribbed*.

ISSUED MAY 27, 1913.

- 1,062,618. Attachment to wheels. T. Townsend, Winnipeg, Manitoba, Canada.
- 1,062,631. Tire protector. G. Bellemare, Winnipeg, Manitoba, Canada.
- 1,062,730. Coupling for uniting hose pipes with faucets. J. G. Poppert, Portland, Ore.
- 1,062,786. Sanitary drinking device. A. S. Miller, Monroe, La.
- 1,062,826. Boot and shoe. S. J. Harris, Randolph, Mass.
- 1,062,828. Caoutchouc-like substance and process of making same. F. Hofmann, C. Coutelle, K. Delbruck and K. Meisenburg, assignors to Farbenfabriken vorm. Friedr. Bayer & Co.—all of Elberfeld, Germany.
- 1,062,912. Caoutchouc-like substance and process of making same. C. Hofmann, C. Coutelle, K. Delbruck and K. Meisenburg, assignors to Farbenfabriken vorm. Friedr. Bayer & Co.—all of Elberfeld, Germany.
- 1,062,913. Caoutchouc substance and process of making same. F. Hofmann, C. Coutelle, K. Delbruck and K. Meisenburg, assignors to Farbenfabriken vorm. Friedr. Bayer & Co.—all of Elberfeld, Germany.
- 1,062,914. Caoutchouc substance and process of making same. F. Hofmann, C. Coutelle, K. Delbruck and K. Meisenburg, assignors to Farbenfabriken vorm. Friedr. Bayer & Co.—all of Elberfeld, Germany.
- 1,062,915. Caoutchouc substance and process of making same. F. Hofmann, C. Coutelle, K. Delbruck and K. Meisenburg, assignors to Farbenfabriken vorm. Friedr. Bayer & Co.—all of Elberfeld, Germany.
- 1,062,958. Filler for caoutchouc and process of manufacturing same. L. Elfrink, Modjokerto, Java.
- 1,062,973. Producing rubber-like compounds. H. S. A. Holt, assignor to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany.
- 1,063,008. Vehicle tire. W. E. Budd, Elizabeth, N. J.
- 1,063,117. Tire of wheels of vehicles or the like. J. Cairns, Walsall, England.
- 1,063,161. Spring wheel. O. H. Hinds, Le Mars, Iowa.

Designs.

- 44,082. Cap for tire valves. W. B. Burke, Cleveland, Ohio.
- 44,087. Automobile tire. C. A. Daniel, Philadelphia, Pa.

Trade Marks.

- 62,730. Birdsey-Somers Co., New York. The word *Onist*. Dress shields.
- 67,899. The Manhattan Rubber Mfg. Co., Passaic, N. J. The word *Paranite* written over line with arrow points at either end.
- 68,530. F. Barth, Barmen, Germany. The word *Ajax*. Rubber cord, suspenders, etc.
- 68,535. The Pragma Tyre Filling Co., Ltd., Derby, England. The word "Pragma." Resilient filling for tires.
- 68,790. The Reality Rubber Co., Massillon, Ohio. The word *Reality*. Rubber gloves.
- 69,202. The Fisk Rubber Co., Chicopee Falls, Mass. The words *Gold Bend*. Rubber tires.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the application, which in the case of these listed below was in 1911 and 1912.

*Denotes Patents for American Inventions.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, MAY 7, 1913.]

- 806 (1912). Dress shields. J. Braunstein, 12 Hillbury Road, Upper Tooting, London.
- 850 (1912). Inflating tires. A. and E. Kloppenburg, Strackholt, Hanover, Germany.
- 1,049 (1912). Vulcanizing presses. H. Webb, 48 Glasgow Road, Plaistow, London.
- 1,087 (1912). Pneumatic tire cover. A. J. Callinan, 281 Collins street, Melbourne, and V. J. Heinecke, Murrumbidgee, Victoria—both in Australia.
- 1,259 (1912). Treads for pneumatic tires. J. F. Cooper, Lyncote, Green Lane, Dulwich, London.
- *1,284 (1912). Dress shields. V. Guinzburg, 721 Broadway, New York, U. S. A.
- 1,289 (1912). Rubber washers for milking appliances. M. Meaney, Codford St. Mary, Wiltshire.
- 1,321 (1912). Continuous tire. R. T. Smith, 111 Lovely Lane, Warrington, Lancashire.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, MAY 15, 1913.]

- 1,505 (1912). Elastic tires. G. A. Golding, Station Hotel, Haywards Heath, Sussex.
- 1,509 (1912). Rubber tips for canes, etc. J. H. Bent, 28 Johnson street, Cheetham, Manchester.
- 1,630 (1912). Massage appliances. M. Laughton, 90 Dickenson Road, Rusholme, and F. A. Coleman, 2 Beech Range, Levenshulme—both in Manchester.
- 1,649 (1912). Rubber coating for rugs, etc. C. E. Player, Auckland, New Zealand.
- 1,717 (1912). Mud guards for wheels. D. Jones, 26 Queen's Head street, Islington, London.
- 1,757 (1912). Inflating pumps. H. J. W. Dunn, 47 Kingsbury Road, Eregington, and R. T. Shelley, Aston Brook street—both in Birmingham.
- 1,784 (1912). Buttons of vulcanized flexible rubber. H. Jelley, "Westover," Selly Park Road, Selly Park, Birmingham.
- 1,843 (1912). India rubber compositions. C. Marter, 131 Tottenham Road, Southgate Road, Hackney, London.
- 1,909 (1912). Air tubes and chambers. A. Whiteway and C. McIntosh & Co., Cambridge street, Manchester.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, MAY 21, 1913.]

- 2,029 (1912). Silk and rubber tire fabrics. W. E. Muntz, 89 Pall Mall, London.
- 2,075 (1912). Reclaimed rubber. W. E. W. Richards, 50 Great Tower street, London.
- 2,199 (1912). Continuous elastic tires. N. Thonard, 2 Place du Theatre, Liege, Belgium.
- 2,246 (1912). Block tires. J. Berry, Kenrick Road, Mapperley, Nottingham.
- 2,306 (1912). Attaching rubber to metals. E. R. Boyston, Tower Building, Water street, Liverpool.
- 2,312 (1912). Vulcanized india rubber. Farbenfabriken vorm. F. Bayer & Co., 217 Koenigstrasse, Elberfeld, Germany.
- 2,313 (1912). Caoutchouc. Farbenfabriken vorm. F. Bayer & Co., 217 Koenigstrasse, Elberfeld, Germany.
- *2,332 (1912). Boots, etc. E. Fuller, 352 Weybasset street, and J. Rosenblatt, 80 Clifford street—both in Providence, R. I., U. S. A.
- *2,342 (1912). Infatable suit for aeronauts. A. W. de Meir, Providence, R. I., U. S. A.
- 2,424 (1912). Rubber tread bands. P. Bold, Darmietzel, Post Quart-schen, Neumark, and P. Richter, Ostbahn—both in Berlin.
- 2,599 (1912). Dress shields. F. H. Mottershaw and C. Mackintosh & Co., Cambridge street, Manchester.
- 2,825 (1912). Rubber heels. F. Rossbach, 60 Kettenhofweg, Frankfurt, Germany.
- 3,042 (1912). Viscose. O. Eberhard, 5 Bergstrasse, Heidenau, near Dresden, Saxony.
- 3,043 (1912). Viscose; purifying gases. E. Knoevenagel, 28 Zahringerstrasse, and J. Reis, 11 Klosestrasse, and F. Kuckuk, 12 Muhltrasse—all in Heidelberg, Germany.
- 3,095 (1912). Rubber heel pads. F. J. Scholl, 5 Manchester avenue, Aldersgate street, London.
- 3,130 (1912). Hollow rubber tires. A. Cleret, 6 Avenue Gambetta, Paris.
- 3,145 (1912). Tire puncture closing apparatus. R. Haddan, 31 Bedford street, Strand, London.
- 3,191 (1912). Washing india rubber, etc. J. E. Pointon, Westwood Works, Peterborough.
- *3,226 (1912). Vulcanizers. C. M. Metsch, 198 Pennsylvania avenue, East Liverpool, Ohio, U. S. A.

THE KINGDOM OF BELGIUM.

PATENTS PUBLISHED.

- 253,816 (1913). Portable vulcanizing apparatus. C. F. Adamson, East Palestine, U. S. A.
- 254,747 (1913). L. Schuller, Passau, Germany. Vulcanizing apparatus.
- 254,891 (1913). F. Estère Arglada, Vergara 10, Barcelona, Spain. Composition for repairing or gluing rubber objects.
- 254,243 (1913). Oetker A. Alton, Ohenson, Germany. Elastic substance applicable for repairs.

THE FRENCH REPUBLIC.

PATENTS ISSUED (with Dates of Application).

- 448,974 (August 12, 1912). Diamond Rubber Co. Process for improving the lower grades of rubber.
- 449,176 (October 9). T. G. Tye. Process and apparatus for purifying gums or resins.
- 449,190 (December 16, 1911). H. Carroll. Process for the removal of substances from vulcanized rubber objects.
- 449,197 (October 9, 1912). L. Hardaker. Improvements in vehicle wheels with double tires.
- 449,220 (October 10). A. Mantelet fils. Elastic belt with combined horizontal and oblique bands.
- 449,224 (October 10). C. Terrier. Appliance for vulcanizing repairs to pneumatic tires.
- 449,250 (August 23). A. Fortini. Tires composed of pieces of leather or other substances.
- 449,291 (September 27). P. Bellot. Protectors for pneumatic tires.
- 449,306 (October 9). W. Köhler. Cover and tread for pneumatic tires.
- 449,425 (October 15). P. Reynier. Improvements in manufacture of pneumatic tires.
- 449,458 (December 23, 1911). Van Steinbrugge & Breton. Shaped surgical glove of vulcanized rubber and its manufacture.
- 449,599 (December 27). Delahaye & Co. Anti-skid hood on rubber tire.
- 449,601 (December 27). Etablissements Hutchinson. Fabric for aerostat covers.
- 449,613 (October 17, 1912). J. Bertrand. New mud guard for vehicles adjustable in every direction.
- 449,714 (December 30, 1911). C. Moré. Elastic vehicle tires.
- 449,735 (October 23, 1912). N. G. Nevins. Dress shields.
- 449,767 (September 17). Degruilly. Automobile wheel with interior pneumatic tire.
- 449,793 (October 18). P. Magnus. Covers for automobile or other wheels.
- 449,818 (October 25). C. H. Nichols. Mud guards for wheels of automobiles and other vehicles.
- 449,930 (October 29). Godek & Benjamin. Improvements in elastic tires in rubber or other like substances.
- 449,811 (October 24). P. E. Barrows. Plastic composition and objects containing rubber and their process of manufacture.
- 450,036 (October 26). H. Ruhnen. Solid automobile tires.
- 450,157 (October 31). W. Kops. Elastic fabrics.
- 450,040 (October 30). J. B. Alana. Process of repairing covers of pneumatic tires.
- 450,147 (November 4). T. Kanticki. Mud guard for automobiles.
- 450,176 (January 11). H. Brionne. Anti-skid protector for solid or pneumatic tires.
- 450,206 (November 6). J. Françon. Mixed elastic tire.
- 450,216 (January 13). J. S. Mariani & F. Hussion fils aîné & Vaillant. Seamless dress shields.
- 450,257 (October 16, 1912). R. L. Fidide. Circular mudguards.
- 450,309 (November 7). L. Goodman and J. E. Goodman. Pneumatic tire cover.
- 450,389 (November 6). G. Cros. Pneumatic tire for vehicles, intended to circulate on moving surfaces.
- 450,395 (November 11). P. C. Fox. Vehicle tire.
- 450,452 (November 12). F. A. Byrne. Process and apparatus for the coagulation and treatment of rubber.
- 450,561 (November 12). F. A. Byrne. Process and appliance for the coagulation and treatment of rubber.
- 450,567 (November 13). Farbenfabriken vorm. Friedr. Bayer & Co. Process of dyeing rubber.
- 450,527 (October 23). C. E. Moser. Anti-skid tire for motor vehicles.
- 450,575 (November 13). A. Clément-Bayard. Movable wheel.
- 450,626 (November 15). M. Schwerthführer. Economical tire.
- 450,650 (November 16). H. Stephens. Piece for repairing pneumatic tires, air chambers, etc.
- 450,651 (November 16). L. J. Perry. Improvements in tires.
- 450,667 (November 16). N. J. Spriggs. Improvements in repairing rubber articles.
- 450,686 (November 18). N. E. Carmont. Improvements in tires and tire covers.
- 450,739 (November 19). G. H. E. Cooke. Improvements in pneumatic tires.
- 450,729 (November 19). Motoculture Company. Anti-skid device for wheels of automobiles, traveling on fields and meadows.
- 450,777 (November 20). D. O. Nation. Improvement in vehicle tires.
- 450,887 (November 16). E. Windel. Pneumatic tire.
- 450,914 (November 21). A. Paris & L. Paris. Mudguards for wheels.
- 450,952 (November 22). T. D. Kelly. Improved vehicle tire.
- 451,042 (November 26). Julius Römpler Co. Elastic fabric and its process of manufacture.
- 451,072 (November 27). P. Fequant. Metal wheel with elastic tire.
- 451,091 (October 3). A. J. Ouet. Mudguards for all descriptions of vehicles.
- 451,113 (November 12). U. Sarraz & E. Sarraz. Product and process for repair of air chambers and pneumatic tires.
- 451,239 (December 2). F. Pavlick. Protective cover for pneumatic tires.
- 451,258 (December 2). Mile. Lloyd. Improved tire.
- 451,266 (February 8). E. Robergel Co. Elastic tires.
- 451,279 (December 3). A. A. Legrand, G. Depoilly and M. Durvien. Pneumatic mudguard for vehicles.
- 451,300 (December 3). A. Ducos. Sole of felt and rubber and its process of manufacture.

[NOTE.—Printed Copies of specifications of French patents can be obtained from R. Bobet, Ingenieur-Conseil, 16 avenue de Villiers, Paris, at 50 cents each, postpaid.]

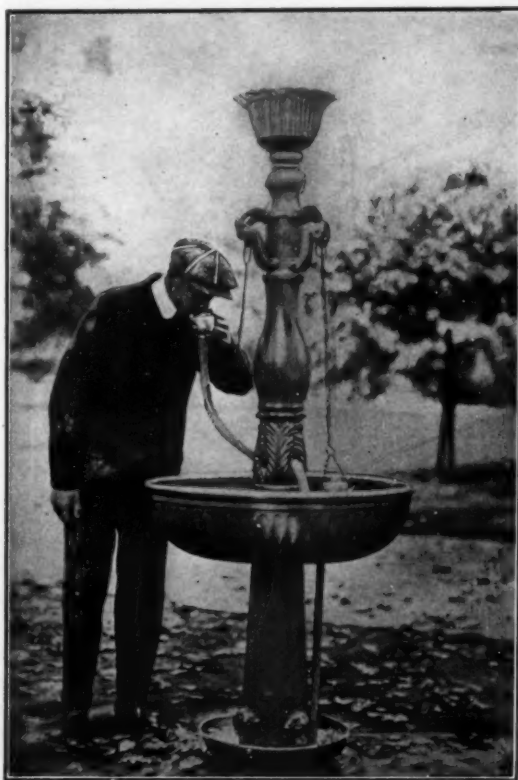
THE GERMAN EMPIRE.

PATENTS ISSUED (with Dates of Validity).

- 259,253 (September 19, 1912). Process of separation of rubber or balata from latex. Dr. Heinrich Colosseus, Regensburger Strasse 27, Berlin.
- 259,324 (April 12, 1912). Pneumatic tires with laced tread for motor trucks and similar vehicles. Eugen Fritz, Saarbrücken.
- 259,421 (December 15, 1911). Improvements in rubber heels. Atleta Rubber Works, Elberfeld-Vohwinkel.
- 259,721 (June 28, 1911). Process for separation of rubber from latex. Wilhelm Pahl, Dortmund.
- 259,722 (May 26, 1912). Rubber substitute. Farbenfabriken vorm. Friedr. Bayer & Co., Leverkusen.
- 260,196 (September 3, 1911). Improvements in vulcanizing presses. A. Olier & Co., Clermont-Ferrand, France.
- 260,714 (May 21, 1912). Seamless football covers of vulcanized rubber with fabric lining. Moritz Richard Fecht, Leipziger Strasse 8, Dresden.
- 260,956 (January 31, 1911). Process for production of cellular rubber objects. H. Dogny and V. Henri, Paris.
- 260,916 (September 21, 1912). Process for vulcanization of rubber, of unsaturated fatty oils and their derivatives. Dr. Hans Klopstock, Berlin-Wilmersdorf.
- 261,241 (January 20, 1912). Production of elastic substances, having the properties of rubber. Willi Ernst Reeser, Amsterdam.
- 261,438 (January 16, 1912). Process for making covers for pneumatic tires. Ernest Clark, London.

SANITARY DRINKING CUPS.

Ever since everybody became so much exercised—rightly or wrongly—over the germ theory, there has been a perpetual effort to design the most convenient sort of sanitary drinking cup. The accompanying illustration shows one used in Washington.



Harris & Ewing, Washington, D. C.
SANITARY DRINKING CUP ATTACHED TO RUBBER TUBE.

It will be noted that rubber tubes are connected with the fountain, about long enough for convenient use by a man of ordinary height. At the end of the tube there is a cup; but it is not necessary for the lips to come in contact with the cup, as the force of water carries it about an inch above the cup, so that you can drink water out of the air. Only the most perverse person can imbibe any germs when using this style of cup.

PNEUMATIC TREADS FOR HUMAN FEET.

A NEWSPAPER writer with a well-developed imagination that ought to make him successful in his high calling, recently contributed to "The Lynn Item" a disquisition on "The Possibilities of Rubber Soles," in which he sets forth the theory that because hides have gone up to 20 cents a pound and rubber gone down to \$1 a pound, we may soon discard leather soles for our shoes and take entirely to rubber soles, with pneumatic inner cushions. As rubber has still further dropped in price since this was written, and is likely as time goes on to seek lower and lower levels (within certain limitations), and as hides in the meantime are likely to become still more expensive, the writer's dream of universal rubber soling for civilized footwear may quite possibly come true. Here is what he has to say:

"With hides up to 20 cents a pound, and prospects of going higher, and rubber down below \$1 a pound and prospects of going lower, and a fashion of rubber soled shoes setting in, the time is at hand for speculation as to whether or not rubber bottomed shoes will take the place of leather bottomed shoes in the same fashion that rubber tired vehicles have taken the place of iron tired vehicles.

"It is not utterly impossible to conceive a pneumatic soled shoe. People wearing such shoes would certainly tread on air, and find life's walk easy, as far as physical exertion is concerned. To make a pneumatic sole, with an inner tube to hold air, would be a simple task in the mechanics of the rubber industry.

"To fill the inner tube with air would not be a difficult task in these days of common air compressors and pumps. The vacuum cleaner of the home might have a reverse gear, which would cause the bellows to pump air into the sole of the shoe, instead of to pump air out of the room and take with it dust and dirt. And if a person did not have any sort of an air compressor at home, he might go to the nearest garage, and use the common air pumps, or, in a final emergency, he might blow up his soles with a little hand pump, the same as is used by bicyclists.

"If people should wear pneumatic soled shoes they would naturally carry with them a repair kit, consisting chiefly of a few patches and plugs to use on those parts of the soles which might be punctured by tacks or bits of glass in the streets, or by rough pavings. Everybody who wore pneumatic soled shoes would be glad to join with autoists in voting 30 days in jail to the careless person who threw nails or glass into the street, and also, in voting to exile the street commissioner who failed to keep the sidewalks and the streets clean and smooth for the passage of the air tread shoes.

"Another possibility is that some cautious persons who might dread a punctured sole and a consequent limp home, might have the inner tubes of their soles filled with one of those substitutes for air that is as thick as molasses, and that is sometimes pumped into auto tires to make them wear forever. And on winter days, when sidewalks were slippery, a person afraid of a fall would naturally put some chains on his shoes and save himself from skidding on the ice.

"But the rubber soled shoes are a reality, not a possibility. Thousands of pairs of rubber soled shoes will be worn this summer by young men and young women, and some rubber soled boots will be made in the fall. The manufacturers of rubber goods are making a great deal of progress in the production of rubber footwear. They are able to buy rubber at about \$1 a pound, and to make rubber soles that weigh three-quarters of a pound a pair, and sell them for 50 cents a pair. As time goes on they are apt to get their crude rubber cheaper, and to make their soles lighter, and to sell them for less. It isn't beyond the probabilities of the shoe industry that people will find rubber soles so serviceable and economical for shoes for street wear that they will commonly wear them. A new and unlimited outlet for rubber is thus opened."

Report of the Crude Rubber Market.

THE most prominent feature of the London market for fine Pará during May has been the practical maintenance of the improved values which succeeded the low record of 3s. 3¼d. on April 15. By April 26, the price had recovered to 3s. 4½d., standing on May 24 at 3s. 9d. This price, with slight fluctuations, has ruled throughout June, the figure on June 25 being 3s. 8¾d.

While buyers have been cautious in their operations, sellers have not been trying to force business; with the result that there has hardly been any change in values during the month.

In plantation rubber, the course of the market has, on the other hand, presented a different aspect, as may be seen from the subjoined London quotations.

	Pará.	Plantation.
April 26	3s. 4½d.	3s. 2½d.
May 24	3s. 9 d.	3s. 3 d.
May 31	3s. 8½d.	3s. 2¼d.
June 6	3s. 9¼d.	3s. 1½d.
June 13	3s. 9 d.	3s.
June 20	3s. 8¾d.	2s. 11¾d.
June 25	3s. 8¾d.	2s. 11 d.

Thus, while Pará has held its own, plantation rubber has lost about 3 pence per pound within the last month.

During the six months ending with June, about 11,000 tons of plantation rubber passed through the London auctions, as compared with about 7,000 tons for the first six months of 1912. The average price realized at the January auctions this year was about 4s. 4d., as compared with about 2s. 11d. at the June sales; the effect of the larger offerings being thus demonstrated.

The auction of June 3 contained about 1,000 tons, and was marked by a fair degree of activity on the part of buyers. Prices, however, gave way from 1½d. to 2½d. At the sale of June 17, 900 tons were offered, quotations varying but slightly from those of previous sale.

Attention has been drawn to the prospective effect on the rubber market of the growing demand for solid truck tires.

The attitude of buyers has to a great extent been one of expectancy, there having been a marked disinclination to exceed actual requirements in their operations.

Particulars by mail of the Antwerp sale, held on May 21, show the following results:

	Offered.	Sold.
Congo descriptions	Tons 573	133
Various descriptions	30	2
Plantation descriptions	212	201

Congo descriptions sold at an average decline of about 6 per cent.; plantation rubber having about realized the valuations. A sale was announced for June 25 of 461 tons Congo and 125 tons of plantation.

The Amsterdam sale of June 11 included 58 tons *Hevea*, which realized 7 per cent. below valuations; and 20 tons *Ficus*, which sold at 9 per cent. below estimates.

At Rotterdam on June 6, 18½ tons *Hevea* and 3 tons *Ficus* were sold at the equivalent of ruling London prices.

NEW YORK QUOTATIONS.

FOLLOWING are the quotations at New York for Pará grades, one year ago, one month ago, June 28—the current dates:

PARA.	July 1, '12	June 1, '13.	June 28, '13.
Islands, fine, new	100@101	84@85	82@83
Islands, fine, old			
Upriver, fine, new	110@111	89@92	87@88
Upriver, fine, old	115@116		
Islands, coarse, new	54@ 55	40@41	34@35
Islands, coarse, old			
Upriver, coarse, new	84@ 85	58@59	54@56
Upriver, coarse, old			
Cametá	63@ 64	42@43	42@43
Caucho (Peruvian) ball	82@ 83	58@59	53@54
Caucho (Peruvian) sheet			

PLANTATION CEYLONS.

Fine smoked sheet	118@119	83@..	72@73
Fine pale crepe	117@118	80@..	70@72
Fine sheets and biscuits	113@114	79@80	70@71

CENTRALS.

Esmeralda, sausage	82@ 83	58@59	53@54
Guayaquil, strip			
Nicaragua, scrap	80@ 81	55@56	53@54
Panama			
Mexican plantation, sheet	90@ 95		
Mexican, scrap	80@ 81	56@57	53@57
Mexican, slab			
Mangabeira, sheet			
Guayule	55@ 56		
Balata, sheet	85@ 86		
Balata, block	53@ 54		

AFRICAN.

Lopori, ball, prime			
Lopori, strip, prime			
Aruwimi			
Upper Congo, ball red			
Ikelemba			
Sierra Leone, 1st quality	94@ 95		
Massai, red	95@ 96		
Soudan Niggers			
Cameroon, ball	65@ 66		
Benguela			
Madagascar, pinky	85@ 86		
Accra, flake	27@ 28		

EAST INDIAN.

Assam			
Pontianak	5¼@ 6		
Borneo			

New York

In regard to the financial situation, Albert B. Beers (broker in crude rubber and commercial paper, No. 68 William street, New York) advises as follows: "During June the demand for commercial paper has been very light, and principally from out-of-town banks, city ones doing but little; rates have ruled strong at 5¼@6 per cent. for the best rubber names, and 6¼@6½ per cent. for those not so well known."

NEW YORK PRICES FOR MAY (NEW RUBBER).

	1913.	1912.	1911.
Upriver, fine .....	.81@ .92	1.09@1.12	.93@1.28
Upriver, coarse .....	.54@ .61	.89@ .92	.82@ .89
Islands, fine .....	.78@ .83	1.05@1.10	.92@1.22
Islands, coarse .....	.38@ .42	.58@ .63	.58@ .67
Cametá .....	.42@ .45	.65@ .67	.67@ .76

STATISTICS PARA INDIA RUBBER (IN TONS).

(Including Caucho)

STATISTICS FOR THE MONTH OF MAY.

	Para.	Caucho.	1913.		1912.	1911.	1910.
Receipts at Para.....	1,800	1,080	= 2,880	against	3,410	3,060	2,150
Shipments to Liverpool..	830	490	= 1,320	"	810	1,410	1,020
Shipments to Continental Ports	250	150	= 400	"	320	300	350
Shipments to America....	1,090	520	= 1,610	"	1,900	1,010	270
American Imports	890	400	= 1,290	"	1,480	1,170	280
American Deliveries	920	420	= 1,340	"	1,480	1,470	260
Liverpool Imports	942	588	= 1,530	"	1,257	1,517	2,263
Liverpool Deliveries	953	704	= 1,657	"	1,417	1,446	1,684
Continental Imports	40	170	= 210	"	330	330	340
Continental Deliveries....	100	80	= 180	"	240	310	270

VISIBLE SUPPLY—1st JUNE, 1913.

	1913.	1912.	1911.	1910.
Stock in England, Para, 1st hands.....	1,033	1,270	4,200	1,187
Para, 2nd hands.....	129	594	290	377
Caucho	330	210	520	1,540
Stock in Para, 1st hands.....	70	30	760	690
2nd hands	810	2,240	2,810	...
Syndicate	120	60	180	340
Stock on Continent.....	100	280	130	90
Afloat—Europe	850	540	700	890
Afloat—America	590	350	790	620
	4,032	2,064		

Total Visible Supply, including Caucho. 6,096 6,880 12,040 4,409

CROP STATISTICS—30th JUNE, 1912, 31st MAY, 1913.

	Para.	Caucho.	1912/13.	1911/12.	1910/11.	1909/10.
Para Receipts... { 1912/13 31,010 8,840 }	39,850	36,790	35,780	37,930		
Para Shipments to Europe 16,560 6,290	22,850	18,390	18,590	20,610		
Para Shipments to America 15,740 2,970	18,710	19,400	12,650	16,560		
England Landings, net.....	16,492	13,780	14,350	16,783		
England Deliveries, net.....	16,106	17,290	12,059	15,755		
America Landings, net.....	18,010	21,225	13,260	16,610		
America Deliveries, net.....	18,000	20,945	13,060	17,290		
Continental Imports, net.....	4,570	3,200	3,000	2,880		
Continental Deliveries, net.....	4,285	3,180	2,960	2,810		

POSITION—1st JUNE, 1913.

Decrease in Receipts during May, 1913, against May, 1912.....	530
Increase in Receipts—Crop, July/May, 1912/13, against 1911/12.....	3,060
Decrease in Deliveries—Crop, July/May, 1912/13, England and Continent, against 1911/12	79
Decrease in Deliveries—Crop, July/May, 1912/13, America, against 1911/12	2,945
Decrease in Visible Supply Para Grades, against 1st June last year.....	784
Increase in Stock, England, May 31st, 1913, against May 31st, 1912.....	196

WM. WRIGHT & CO., Brokers.

Liverpool, 3rd June, 1913.

During the month 200 tons, including 10 tons Caucho, have been shipped from Europe to America.

Rotterdam.

HAVELAAR & DE VRIES report (June 10):

The result of sale held 6th inst., was generally satisfactory, particularly in view of the lower prices which had ruled since the catalogue was issued. Most of the lots were sold at the parity of London rates.

Amsterdam.

JOOSTEN & JANSSEN report (June 11):

Out of 81 tons offered at today's sale, 66 tons were sold. The offerings chiefly consisted of *Heves* and *Ficus*, which realized 7 per cent. and 9 per cent. below valuations.

Rubber Scrap Prices.

LATE NEW YORK QUOTATIONS.—Prices paid by consumers for carload lots, per pound.

	June 28, 1913.
Old rubber boots and shoes—domestic.....	9½@ 9½
Old rubber boots and shoes—foreign.....	9¼@ 9½
Pneumatic bicycle tires.....	5 @ 5½
Automobile tires	9½
Solid rubber wagon and carriage tires.....	9 @ 9¼
White trimmed rubber	10¼@ 11
Heavy black rubber.....	4¾@ 5
Air brake hose.....	5½
Garden hose	1½@ 1½
Fire and large hose.....	2 @ 2½
Matting	¾@ ¾
No. 1 white auto tires.....	11½

PARA RUBBER VIA EUROPE.

	POUNDS.
MAY 22.—By the Pretoria—Hamburg:	
Wallace L. Gough (Fine).....	3,000
MAY 26.—By the Lapland—Antwerp:	
Wallace L. Gough (Fine).....	6,000
MAY 26.—By the Carmania—Liverpool:	

Meyer & Brown (Coarse).....	11,500
Raw Product Co. (Coarse).....	24,500
Raw Product Co. (Fine).....	11,500
MAY 26.—By the Kaiserin Augusta Victoria—Hamburg:	
Ed. Maurer (Fine).....	6,000
Wallace L. Gough (Fine).....	2,200
MAY 29.—By the President Grant—Hamburg:	

Wallace L. Gough (Fine).....	8,000
MAY 31.—By the Cedric—Liverpool:	
Various (Fine)	3,000
JUNE 2.—By the Caronia—Liverpool:	
General Rubber Co. (Fine).....	63,000
N. Y. Commercial Co. (Fine).....	27,000
Arnold & Zeiss (Fine).....	180,000
Raw Products Co. (Coarse).....	22,500

WEEKLY MOVEMENT OF LONDON PRICES FOR FINE PARA, 1912 AND 1913.

[IN SHILLINGS AND PENCE PER POUND.]

January 3, 1913.....	4/7½	April 4.....	3/6¼
January 10.....	4/6½	April 11.....	3/4½
January 17.....	4/6½	April 18.....	3/4¾
January 24.....	4/5½	April 25.....	3/4½
January 31.....	4/4	May 2.....	3/5½
February 7.....	4/2¾	May 9.....	3/8¾
February 14.....	4/3	May 16.....	3/10
February 21.....	4/0½	May 23.....	3/9
February 28.....	4/0½	May 31.....	3/8½
March 7.....	3/10¾	June 6.....	3/9¼
March 14.....	3/11¼	June 13.....	3/9
March 20.....	3/11	June 20.....	3/8¾
March 28.....	3/9½		

IMPORTS FROM PARA AT NEW YORK.

[The Figures Indicate Weight in Pounds.]

MAY 23.—By the steamer Christopher, from Para and Manaos:

Arnold & Zeiss.....	5,100	9,600	58,400	37,400=	110,500
General Rubber Co.....	1,500	2,700	.....	.....=	4,200
Meyer & Brown.....	.....	.....	7,800=	7,800	
Meyer & Brown.....	.....	.....	69,300=	69,300	
Meyer & Brown.....	.....	.....	33,700=	33,700	
Astlett & Co.....	68,800	11,100	32,100=	112,000	
Ed. Maurer.....	5,700	.....	78,600=	5,700	
Henderson & Korn.....	1,800	2,500	19,800=	128,400	
Hagemeyer & Brunn.....	6,400	400	2,000=	24,100	
De Lagotellerie.....	.....	.....	.....=	8,800	
	89,300	23,600	227,300	164,300=	504,500

MANAOS.

Arnold & Zeiss.....	14,100	8,700	6,300	51,300=	80,400
Meyer & Brown.....	.....	5,000	.....	.....=	5,000
Ed. Maurer.....	10,900	2,300	1,100=	14,300	
Henderson & Korn.....	800	.....	4,400=	11,800=	17,000
Robinson & Co.....	3,400	.....	.....=	3,400	
De Lagotellerie.....	33,300	.....	.....=	33,300	
	62,500	16,000	11,800	63,100=	153,400
Total	151,800	39,600	239,100	227,400=	657,900

JUNE 3.—By the steamer Aidas from Manaos and Para:

	Fine.	Medium.	Coarse.	Caucho.	TOTAL.
Arnold & Zeiss.....	39,200	53,300	80,800	50,800=	224,100
General Rubber Co.....	44,700	11,300	21,600	23,500=	101,100
Ed. Maurer.....	.....	.....	10,000	48,000=	58,000
Meyer & Brown.....	4,100	.....	1,700	68,000=	73,800
Meyer & Brown.....	12,500	.....	29,000	19,000=	60,500
Ed. Maurer.....	20,200	700	32,300	20,200=	73,400
Henderson & Korn.....	17,300	20,700	22,300	44,500=	104,800
H. A. Astlett.....	27,800	3,900	44,200	19,600=	95,500
De Lagotellerie.....	22,800	4,300	19,800	.....=	46,900
G. Amsinck & Co.....	3,900	200	2,400	2,500=	9,000
	192,500	94,400	264,100	296,100=	847,100

MANAOS.

Arnold & Zeiss.....	43,300	2,700	13,000	78,600=	137,600
Meyer & Brown.....	33,000	4,000	11,000	36,300=	84,300
Robinson & Co.....	15,100	.....	12,500	2,400=	30,000
Henderson & Korn.....	.....	.....	.....	5,700=	5,700
	91,400	6,700	36,500	123,000=	257,600
Total	283,900	101,100	300,600	419,100=	1,104,700

JUNE 14.—By the steamer Crispin from Manaos and Para:

	Fine.	Medium.	Coarse.	Caucho.	TOTAL.
Arnold & Zeiss.....	31,000	21,900	83,100	63,400=	199,400
General Rubber Co.....	27,800	10,400	11,300	1,600=	51,100
Meyer & Brown.....	.....	.....	31,700	10,600=	42,300
Henderson & Korn.....	.....	.....	.....	49,800=	49,800
Ed. Maurer.....	36,500	7,500	25,200	6,000=	75,200
	95,300	39,800	151,300	131,400=	417,800

MANAOS.

Arnold & Zeiss.....	70,200	17,800	23,900	106,300=	218,200
Robinson & Co.....	36,400	2,400	7,700	10,100=	56,600
Henderson & Korn.....	.....	1,100	.....	22,200=	23,300
	106,600	21,300	31,600	138,600=	298,100
Total	201,900	61,100	182,900	270,000=	715,900

JUNE 6.—By the *President Lincoln*=Hamburg:
Ed. Maurer (Fine)..... 12,500
Wallace L. Gough (Coarse)..... 5,000 17,500

JUNE 6.—By the *Maracas*=Ciudad Bolivar:
General Export & Commission Co. (Fine) 12,000

JUNE 6.—By the *Mauritanis*=Liverpool:
Arnold & Zeiss (Fine)..... 33,500

JUNE 7.—By the *Baltic*=Liverpool:
James T. Johnstone (Fine)..... 2,500
Various (Fine)..... 15,500
Various (Coarse)..... 13,500 31,500

JUNE 11.—By the *Pennsylvania*=Hamburg:
Wallace L. Gough (Fine)..... 3,500

JUNE 16.—By the *Campania*=Liverpool:
Arnold & Zeiss (Fine)..... 45,000
General Rubber Co. (Fine)..... 33,500
Robinson & Co. (Fine)..... 5,500 84,000

JUNE 16.—By the *Florida*=Havre:
Various (Caucho Ball)..... 33,500

JUNE 16.—By the *Amerika*=Hamburg:
Ed. Maurer (Fine)..... 3,000
Wallace L. Gough (Fine)..... 7,500 10,500

JUNE 16.—By the *Grenada*=Ciudad Bolivar:
Gen. Export & Com. Co. (Fine)..... 30,000
Gen. Export & Com. Co. (Coarse)..... 25,000
Yglesias, Lobo & Co. (Fine)..... 4,000
Yglesias, Lobo & Co. (Coarse)..... 7,000 66,000

JUNE 17.—By the *Niagara*=Havre:
Adolph Hirsch & Co. (Caucho Ball)..... 11,200
Arnold & Zeiss (Caucho Ball)..... 11,200 22,400

JUNE 17.—By the *Purus*=Paris:
General Rubber Co. (Fine)..... 400
General Rubber Co. (Coarse)..... 11,200
General Rubber Co. (Caucho Ball)..... 600
Meyer & Brown (Caucho Ball)..... 20,700 32,900

OTHER NEW YORK ARRIVALS.

CENTRALS.

[*This sign, in connection with imports of Centrals, denotes Guayule rubber.]

MAY 22.—By the *Zacapa*=Columbia:
Schulz & Ruckgaber..... 1,000

MAY 22.—By the *Antilla*=Tampico:
H. R. Jeffords..... *35,000
Continental-Mexican Rubber Co. *127,000
Various..... *220,000 *382,000

MAY 23.—By the *Esperanza*=Mexico:
W. L. Wadleigh..... 6,000
E. Steiger & Co..... 6,000
L. Johnson & Co..... 1,600
Hermann Kluge..... 2,000
Willard Hawes & Co..... 1,200
Maldonado & Co..... 500
J. W. Wilson & Co..... 1,000 18,300

MAY 26.—By the *Prins Sigismund*=Columbia:
Caballero & Blanco..... 500
Various..... 1,000 1,500

MAY 26.—By the *Colon*=Colon:
F. Rosenstern..... 12,000
G. Amsinck & Co..... 10,000
Mecke & Co. (Caucho)..... 1,600
W. R. Grace & Co..... 400
Wessels, Kulenkampff & Co..... 500 24,500

MAY 26.—By the *Vigilancia*=Mexico:
A. S. Lascelles & Co..... 1,000

MAY 26.—By the *Vesiris*=Bahia:
A. Hirsch & Co..... 30,000

MAY 27.—By the *Hawaiian*=Mexico:
Neuss Hesselein & Co..... 2,000
Alexander & Baldwin..... 1,000 3,000

MAY 28.—By the *El Norte*=Galveston:
Various..... *4,500

MAY 31.—By the *Mexico*=Mexico:
L. Johnson & Co..... 8,500
E. Steiger & Co..... 500
General Export & Com. Co..... 1,000
Harburger & Stack..... 1,000
Mecke & Co..... 300
Various..... 6,700 18,000

MAY 31.—By the *El Rio*=New Orleans:
Various..... 1,200

MAY 31.—By the *Almirante*=Columbia:
G. Amsinck & Co..... 6,000
R. del Castillo..... 2,000
Schulz & Ruckgaber..... 1,000 9,000

MAY 31.—By the *Sarnia*=Mexico:
Meyer & Brown..... 2,500
W. Wadleigh..... 1,500 4,000

MAY 31.—By the *Guantanamo*=Tampico:

Arnold & Zeiss..... *33,500
Ed. Maurer..... *33,500
American Trading Co..... *2,200
Lawrence Import Co..... *300 *69,500

JUNE 2.—By the *Advance*=Colon:
G. Amsinck & Co..... 3,600
Broedermann & Litzrodt..... 900
Shutte, Bunemann & Co..... 200 4,700

JUNE 2.—By the *Altai*=Columbia:
Kunhardt & Co..... 5,000
Various..... 4,000 9,000

JUNE 2.—By the *El Alba*=Galveston:
Various..... *6,500

JUNE 4.—By the *Prins Joachim*=Columbia:
Andean Trading Co..... 3,500

JUNE 4.—By the *Oruba*=Columbia:
R. del Castillo..... 1,000

JUNE 5.—By the *Santa Marta*=Columbia:
G. Amsinck & Co..... 1,200
R. del Castillo..... 600 1,800

JUNE 5.—By the *Cleveland*=Hamburg:
Ed. Maurer..... 14,500

JUNE 6.—By the *President Lincoln*=Hamburg:
Ed. Maurer..... 17,700
Arnold & Zeiss..... 62,000
Various..... 9,000 88,700

JUNE 6.—By the *Siberia*=Frontera:
General Export & Commission Co..... 1,500

JUNE 6.—By the *El Sud*=Galveston:
Various..... *11,200

JUNE 6.—By the *Santiago*=Tampico:
H. R. Jeffords..... *33,500

JUNE 7.—By the *Monterey*=Mexico:
G. Amsinck & Co..... 2,000
L. Johnson & Co..... 2,200
H. Marquardt & Co..... 600
Coruba Plantation Co..... 700 5,500

JUNE 9.—By the *Panama*=Colon:
G. Amsinck & Co..... 7,200
Fiza Nephews & Co..... 4,000 11,200

JUNE 9.—By the *Prince Eitel Friedrich*=Columbia:
Isaac & Samuel..... 2,000
De Lima Cortissoz & Co..... 1,000 3,000

JUNE 9.—By the *Frutera*=Colon:
A. Rosenthal & Sons..... 2,200
R. G. Barthold..... 300 2,500

JUNE 9.—By the *Seguranca*=Tampico:
Continental-Mexican Rubber Co..... *64,600

JUNE 9.—By the *El Valle*=Galveston:
Various..... *2,500

JUNE 9.—By the *Byron*=Bahia:
J. H. Rosbach Bros. & Co..... 4,000

JUNE 9.—By the *Portuguese Prince*=Bahia:
A. Hirsch & Co..... 23,000

JUNE 10.—By the *Carl Schurz*=Columbia:
Andean Trading Co..... 4,000

JUNE 13.—By the *Momus*=New Orleans:
A. N. Rotholz..... 6,000

JUNE 13.—By the *El Tid*=Galveston:
Various..... *10,000

JUNE 14.—By the *Alliance*=Colon:
Pottberg, Ebeling & Co..... 3,500
Dumarest Bros..... 500 4,000

JUNE 14.—By the *Morro Castle*=Mexico:
Harburger & Stack..... 1,000

JUNE 16.—By the *Albion*=Columbia:
Caballero & Blanco..... 1,500
De Lima Cortissoz & Co..... 700 2,200

JUNE 16.—By the *Proteus*=New Orleans:
Various..... 500

JUNE 16.—By the *Amerika*=Hamburg:
Various..... 11,200

JUNE 17.—By the *Tivives*=Port Simon:
Gillespie Bros..... 700

JUNE 18.—By the *Thames*=Colon:
J. S. Sambrada & Co..... 1,200
C. E. Griffin..... 1,200 2,400

JUNE 19.—By the *Antilla*=Tampico:
Continental-Mexican Rubber Co. *99,000
Arnold & Zeiss..... *33,500
Ed. Maurer..... *170,000
J. W. Wilson..... *1,000 *303,500

AFRICAN.

Pounds.

MAY 22.—By the *Pretoria*=Hamburg:
Meyer & Brown..... 19,000
Arnold & Zeiss..... 22,500
Ed. Maurer..... 10,500 52,000

MAY 24.—By the *Celtic*=Liverpool:
James T. Johnstone..... 11,200

MAY 26.—By the *Lapland*=Antwerp:
Meyer & Brown..... 1,500

MAY 26.—By the *Carmania*=Liverpool:
General Rubber Co..... 11,200
Robinson & Co..... 6,500 17,700

MAY 26.—By the *St. Paul*=Southampton:
Arnold & Zeiss..... 11,500

MAY 26.—By the *Kaiserin Auguste Victoria*=Hamburg:
Meyer & Brown..... 108,000
Ed. Maurer..... 11,200
Henderson & Korn..... 18,000
Wallace L. Gough..... 25,000 162,200

MAY 26.—By the *La Lorraine*=Havre:
Meyer & Brown..... 78,000

MAY 26.—By the *Zaandijk*=Amsterdam:
Manhattan Rubber Mfg. Co..... 5,000

MAY 31.—By the *Cedric*=Liverpool:
Various..... 4,500

JUNE 2.—By the *Caronia*=Liverpool:
Robinson & Co..... 33,500
James T. Johnstone..... 1,500 35,000

JUNE 2.—By the *Minnetonka*=London:
Meyer & Brown..... 4,500
Arnold & Zeiss..... 17,500 22,000

JUNE 4.—By the *Armenis*=Hamburg:
Various..... 33,500

JUNE 5.—By the *Cleveland*=Hamburg:
Ed. Maurer..... 33,500

JUNE 6.—By the *President Lincoln*=Hamburg:
Ed. Maurer..... 11,200
Ed. Maurer..... 17,500
Wallace L. Gough..... 17,500
Henderson & Korn..... 2,200 48,400

JUNE 10.—By the *Zeeland*=Antwerp:
Various..... 10,000

JUNE 11.—By the *Pennsylvania*=Hamburg:
Meyer & Brown..... 29,000
Arnold & Zeiss..... 11,500
Wallace L. Gough..... 17,500
Ed. Maurer..... 5,000
Henderson & Korn..... 4,500
Various..... 11,200 78,700

JUNE 14.—By the *Adriatic*=Liverpool:
James T. Johnstone..... 2,500
Henderson & Korn..... 2,000
Various..... 11,200 15,700

JUNE 16.—By the *Campania*=Liverpool:
Robinson & Co..... 4,000

JUNE 16.—By the *Florida*=Havre:
Various..... 11,200

JUNE 16.—By the *Amerika*=Hamburg:
Arnold & Zeiss..... 29,200
Ed. Maurer..... 9,000
Wallace L. Gough..... 25,500
Various..... 20,000 83,700

JUNE 17.—By the *Finland*=Antwerp:
Ed. Maurer..... 20,000

EAST INDIAN.

[*Denotes Plantation Rubber.]

Pounds.

MAY 22.—By the *Pretoria*=Hamburg:
Wallace L. Gough..... *26,500

MAY 26.—By the *Lapland*=Antwerp:
Meyer & Brown..... *7,800
Rubber Trading Co..... *22,500
Wallace L. Gough..... *15,000
Various..... *30,000 *75,300

MAY 26.—By the *St. Paul*=Southampton:
Meyer & Brown..... *24,000
Ed. Maurer..... *33,500
Robinson & Co..... *15,500
Arnold & Zeiss..... *22,500
William H. Stiles..... *4,500
Various..... *4,000 *104,000

MAY 26.—By the *Kaiserin Auguste Victoria*=Hamburg:
Meyer & Brown..... *10,000
Ed. Maurer..... *20,000 *30,000

MAY 26.—By the <i>Karonga</i> —Colombo:	
Meyer & Brown.....	*54,000
Ed. Maurer.....	*101,000
H. W. Peabody & Co.....	*25,000
Various.....	*180,000
MAY 26.—By the <i>Rochambeau</i> —Havre:	
Michelin Tire Co.....	*50,000
MAY 27.—By the <i>Minnewaska</i> —London:	
Meyer & Brown.....	*33,500
James T. Johnstone.....	*80,000
Charles T. Wilson.....	*40,000
L. Littlejohn & Co.....	*12,000
Various.....	*165,500
MAY 28.—By the <i>Shimosa</i> —Singapore:	
Ed. Maurer.....	*70,000
Malaysian Rubber Co.....	*33,500
Ed. Boustead & Co.....	*12,500
L. Littlejohn & Co.....	*25,500
L. Littlejohn & Co.....	*11,200
Various.....	*30,000
Various.....	*182,700
MAY 29.—By the <i>Potsdam</i> —Amsterdam:	
Rubber Trading Co.....	*7,000
MAY 29.—By the <i>Majestic</i> —Southampton:	
Meyer & Brown.....	*32,000
Arnold & Zeiss.....	*25,000
A. W. Brunh.....	*11,200
N. Y. Commercial Co.....	*85,000
Robinson & Co.....	*13,500
Various.....	*69,000
Various.....	*235,700
MAY 29.—By the <i>President Grant</i> —Hamburg:	
Wallace L. Gough.....	*7,500
JUNE 2.—By the <i>Minnetonka</i> —London:	
Meyer & Brown.....	*87,800
N. Y. Commercial Co.....	*190,000
Arnold & Zeiss.....	*56,000
Charles T. Wilson.....	*35,000
James T. Johnstone.....	*16,500
Raw Products Co.....	*13,500
Robinson & Co.....	*12,500
Malaysian Rubber Co.....	*4,500
Ed. Maurer.....	*10,000
Robert Badenhop.....	*3,000
Various.....	*96,700
Various.....	*525,500
JUNE 3.—By the <i>Rheinfels</i> —Colombo:	
Ed. Maurer.....	*13,500
Meyer & Brown.....	*11,500
Various.....	*25,000
JUNE 3.—By the <i>New Amsterdam</i> —Amsterdam:	
Robert Badenhop.....	*17,500
Rubber Trading Co.....	*2,000
Various.....	*14,500
Various.....	*34,000
JUNE 4.—By the <i>Kroonland</i> —Antwerp:	
Meyer & Brown.....	*80,000
Various.....	*20,000
Various.....	*100,000
JUNE 5.—By the <i>Oceanic</i> —Southampton:	
Meyer & Brown.....	*14,800

Rubber Trading Co.....	*18,500
N. Y. Commercial Co.....	*7,500
Arnold & Zeiss.....	*145,000
Charles T. Wilson.....	*135,000
Various.....	*80,000
Various.....	*400,800
JUNE 6.—By the <i>President Lincoln</i> —Hamburg:	
Arnold & Zeiss.....	*3,000
Various.....	*4,000
Various.....	*7,000
JUNE 9.—By the <i>Philadelphia</i> —Southampton:	
Meyer & Brown.....	*68,000
Ed. Maurer.....	*13,500
Rubber Trading Co.....	*9,000
Charles T. Wilson.....	*50,000
Various.....	*140,500
JUNE 9.—By the <i>Inverclyde</i> —Singapore:	
Meyer & Brown.....	*11,000
Ed. Maurer.....	*22,500
A. Hirsch & Co.....	*9,000
L. Littlejohn & Co.....	*5,000
Various.....	*47,500
JUNE 10.—By the <i>Zeeland</i> —Antwerp:	
Meyer & Brown.....	*27,000
Arnold & Zeiss.....	*92,000
Various.....	*45,000
Various.....	*164,000
JUNE 10.—By the <i>Minneapolis</i> —London:	
Meyer & Brown.....	*41,500
James T. Johnstone.....	*6,000
Lunham & Moore.....	*16,000
Ed. Maurer.....	*6,000
Various.....	*33,500
Various.....	*103,000
JUNE 10.—By the <i>Noordam</i> —Amsterdam:	
Various.....	*3,500
JUNE 11.—By the <i>Olympic</i> —Southampton:	
Ed. Maurer.....	*43,000
Arnold & Zeiss.....	*35,500
Meyer & Brown.....	*7,000
Rubber Trading Co.....	*5,000
Various.....	*88,500
JUNE 11.—By the <i>Pennsylvania</i> —Hamburg:	
Ed. Maurer.....	*7,000
Charles T. Wilson.....	*2,000
Wallace L. Gough.....	*2,500
Henderson & Korn.....	*2,200
Various.....	*13,700
JUNE 16.—By the <i>New York</i> —Southampton:	
Arnold & Zeiss.....	*75,000
Ed. Maurer.....	*22,500
Robinson & Co.....	*5,000
W. Stiles.....	*1,700
Various.....	*3,000
Various.....	*107,200
JUNE 16.—By the <i>Amerika</i> —Hamburg:	
Wallace L. Gough.....	*3,000
JUNE 16.—By the <i>Polaris</i> —Colombo:	
Meyer & Brown.....	*85,000
Ed. Maurer.....	*25,000
James T. Johnstone.....	*4,500

H. W. Peabody & Co.....	*2,200
Various.....	*8,500
Various.....	*122,700
JUNE 16.—By the <i>Kentucky</i> —Colombo:	
Meyer & Brown.....	*54,000
Ed. Maurer.....	*60,000
H. W. Peabody & Co.....	*25,000
N. Y. Commercial Co.....	*18,500
Various.....	*13,500
Various.....	*171,000
JUNE 17.—By the <i>Finland</i> —Antwerp:	
Meyer & Brown.....	*53,000
JUNE 17.—By the <i>Minnehaha</i> —London:	
Meyer & Brown.....	*15,500
Adolph Hirsch & Co.....	*11,200
James T. Johnstone.....	*7,000
General Rubber Co.....	*50,000
L. Littlejohn & Co.....	*11,200
Charles T. Wilson.....	*40,000
L. Blitz.....	*8,000
Various.....	*12,500
Various.....	*155,400
JUNE 18.—By the <i>Welsh Price</i> —Singapore:	
Ed. Maurer.....	*90,000
Malaysian Rubber Co.....	*25,000
James T. Johnstone.....	*25,000
L. Littlejohn & Co.....	*37,200
Adolph Hirsch & Co.....	*5,500
General Rubber Co.....	*11,500
E. Boustead & Co.....	*11,200
Broome Rubber Co.....	*3,000
Various.....	*208,400

BOSTON ARRIVALS.

IMPORTS IN MAY, 1913.

	Pounds.	Value.
Gutta-jelutong (Pontianak).....	1,505,337	\$76,249
India-rubber.....	113,050	92,496

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—MAY, 1913.

Imports:	Pounds.	Value.
India-rubber.....	8,339,721	\$5,846,621
Balata.....	52,917	32,081
Guayule.....	789,781	341,329
Gutta-percha.....	15,139	13,575
Gutta-jelutong (Pontianak).....	4,173,156	202,503
Total.....	13,370,714	\$6,436,109
Exports:	Pounds.	Value.
India-rubber.....	93,646	\$54,753
Balata.....	2,320	1,200
Guayule.....	11,200	8,087
Reclaimed rubber.....	71,727	11,261
Gutta-jelutong (Pontianak).....	.....	.....
Rubber scrap, imported.....	2,485,811	\$225,764
Rubber scrap, exported.....	313,760	50,476

EXPORTS OF INDIA-RUBBER FROM PARA, MANAOS AND IQUITOS FOR MAY, 1913 (IN KILOGRAMS).

NEW YORK.					EUROPE.					GRAND TOTAL.	
EXPORTERS.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	GRAND TOTAL.
Zarges, Berringer & Co.....	53,243	41,550	129,828	93,434	318,055	131,999	11,123	34,548	121,077	298,747	616,802
General Rubber Co. of Brazil.....	45,952	11,747	53,213	52,227	163,139	21,045	6,544	3,559	14,285	45,433	208,572
J. Marques.....	119,808	31,199	206,086	119,849	476,942	16,480	2,550	31,020	52,570	529,512	1,006,414
R. O. Ahlers & Co.....	1,962	.....	845	68,609	71,416	38,001	.....	18,171	13,842	70,014	141,430
Suarez Hermanos & Co., Ltd.....	.....	.....	.....	.....	.....	154,358	1,021	35,601	86,839	277,819	277,819
De Lagotellerie & Co.....	15,980	2,550	14,850	.....	33,380	.....	.....	.....	.....	.....	33,380
Pires Teixeira & Co.....	5,270	2,890	23,430	.....	31,590	17,850	.....	.....	.....	17,850	49,440
Sundry exporters.....	1,848	84	1,193	1,250	4,375	.....	.....	2,310	3,640	5,950	10,325
Itacoatiara direct.....	1,050	.....	1,200	1,800	4,050	1,800	900	2,760	750	6,210	10,260
Manaos direct.....	245,113	90,020	430,645	337,169	1,102,947	381,533	22,138	127,969	242,953	774,593	1,877,540
Iquitos direct.....	201,807	37,100	72,136	192,236	503,279	370,523	48,028	112,786	354,546	885,883	1,389,162
Various.....	.....	.....	.....	.....	.....	19,055	709	4,357	34,121	58,242	58,242
Total.....	446,920	127,120	502,781	529,405	1,606,226	771,111	70,875	245,112	631,620	1,718,718	3,324,944

EXPORTS OF INDIA-RUBBER FROM MANAOS FOR MAY, 1913 (IN KILOGRAMS).

NEW YORK.					EUROPE.					GRAND TOTAL.	
EXPORTERS.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	GRAND TOTAL.
Zarges, Ohliger & Co.....	61,059	13,988	20,712	115,582	214,341	45,131	6,957	20,234	174,944	247,266	461,607
General Rubber Co. of Brazil.....	14,111	5,911	5,520	18,141	43,683	31,695	8,888	20,350	81,041	141,974	185,657
Ahlers & Co.....	26,088	1,610	12,465	26,384	66,547	168,202	17,532	17,687	71,311	274,732	341,279
De Lagotellerie & Co.....	15,840	.....	.....	.....	15,840	58,899	12,015	19,081	12,478	102,473	118,313
J. G. Araujo.....	.....	.....	.....	.....	.....	39,234	2,976	46,565	7,616	96,391	96,391
Mesquita & Co.....	.....	.....	.....	.....	.....	498	120	1,582	738	2,938	2,938
Semper & Co.....	.....	.....	.....	.....	.....	24,647	.....	9,479	25,279	59,405	59,405
Theodore Lévy, Camille & Co.....	.....	.....	.....	.....	.....	.....	.....	1,823	7,868	9,691	9,691
W. Peters & Co.....	5,208	1,105	541	.....	6,854	4,449	663	5,566	21,791	32,469	39,323
Suarez Hermanos & Co., Ltd.....	.....	.....	.....	.....	.....	3,314	.....	.....	.....	3,314	3,314
Gunaburger & Co.....	.....	.....	.....	.....	.....	.....	.....	1,656	.....	1,656	1,656
H. Balding.....	.....	.....	.....	.....	.....	11,559	.....	2,427	1,692	15,678	15,678
Sundry.....	.....	.....	.....	.....	.....	.....	.....	1,788	450	2,238	2,238
Iquitos direct.....	122,306	22,614	39,238	163,107	347,265	387,628	49,151	146,582	406,864	990,225	1,337,490
Various.....	17,903	281	2,980	95,728	116,892	19,055	709	4,357	34,121	58,242	175,134
Total, May, 1913.....	140,209	22,895	42,218	258,835	464,157	406,683	49,860	150,939	440,985	1,048,467	1,512,624



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Antwerp.

RUBBER STATISTICS FOR MAY, 1913.

DETAILS.	1913.	1912.	1911.	1910.	1909.
Stocks, April 30.....kilos	990,270	437,513	599,114	470,468	607,787
Arrivals in May—					
Congo sorts	241,989	152,024	187,106	128,052	442,098
Other sorts	3,205	12,902	29,125	17,969	64,725
Plantation sorts	184,398	107,367	41,754	44,037	5,235
Aggregating.....	1,419,862	709,806	857,099	660,526	1,122,848
Sales in May.....	365,869	265,369	243,089	116,663	433,610
Stocks, May 31.....	1,053,993	444,437	614,010	543,863	689,238
Arrivals since Jan. 1—					
Congo sorts	1,318,775	1,243,101	1,259,621	1,299,338	1,443,130
Other sorts	46,521	58,637	235,093	138,138	433,700
Plantation sorts	868,109	514,692	299,316	222,131	96,600
Aggregating	2,233,405	1,816,430	1,794,030	1,659,607	1,973,430
Sales since Jan. 1.....	1,690,472	2,046,531	1,768,232	1,657,256	1,879,927

RUBBER ARRIVALS FROM THE CONGO.

JUNE 5.—By the steamer Elisabethville:

	Kilos.
Junge & Co.....(Société Générale Africaine)	51,600
do.....(Chemins de fer Grands Lacs)	7,900
do.....(Comptoir Commercial Congolais)	15,000
do.....(Belge du Haut Congo)	750
do.....(Intertropical)	4,800
do.....	5,500
Société Coloniale Anversoise.....(Comminière)	11,400
do.....(Haut Congo)	11,100
do.....(Cie. du Kasai)	91,400
Credit Colonial & Commercial (Anc. L. & W. Van de Velde S. A.).....(Vele)	4,200
do.....(Comfina)	9,700
do.....(Vele)	3,300
Osterrieth & Co.....(Lubefu)	4,500
Willart Frères	2,000 223,150

Plantation Rubber From the Far East.

EXPORTS OF CEYLON-GROWN RUBBER.

(From January 1 to May 19, 1913. Compiled by the Ceylon Chamber of Commerce.)

	1912.	1913.
To Great Britain.....pounds	2,205,112	3,980,582
To United States	1,268,902	2,599,367
To Belgium	489,501	1,055,089
To Germany	41,978	97,306
To Australia	37,655	220,151
To Canada	12,121	.....
To Austria	11,920	26,075
To Japan	5,708	81,461
To Italy	4,692	22,460
To Norway and Sweden.....	39	.....
To Holland .....	.....	992
To India .....	.....	209
Total	4,077,628	8,083,692
(Same period 1911—1,796,522; same 1910—838,280.)		

The export figures of rubber for 1913 given in the above table include the imports re-exported. (These amount to 754,967 lb.—613,780 lb. from the Straits and 141,187 lb. from India.—Ed. C. O.) To arrive at the approximate quantity of Ceylon rubber exported for 1913 to date, deduct the quantity of imports from the total exports. In previous years the exports of Ceylon rubber only were given.

TOTAL EXPORTS FROM MALAYA.

[From January 1 to dates named. Reported by Barlow & Co., Singapore. These figures include the production of the Federated Malay States, but not of Ceylon.]

	Singapore.	Penang.	Port Swet-	Total.
	May 7.	March 31.	tenham.	May 14.
Great Britain.....pounds	5,861,565	3,377,200	8,894,630	18,133,395
Continent	67,850	13,734	1,101,433	1,183,017
Japan	305,600	.....	.....	305,600
Australia	43,629	.....	.....	43,629
Ceylon .....	.....	44,800	534,706	579,506
United States.....	2,336,054	67,333	.....	2,403,387
Total	8,614,698	3,503,067	10,530,769	22,648,534
Same period, 1912.....	4,169,266	2,434,719	7,382,645	13,986,630
Same period, 1911.....	1,903,169	1,187,438	4,494,251	7,584,858
Same period, 1910.....	1,012,863	489,755	2,622,166	4,124,784

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